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ANAEMIA ASSOCIATED WITH TRAUMA AND SEPSIS*

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Since the Goulstonian Lecturer in 1932 took as his subject the "pathology and treatment of anaemia" great advances have been made in our understanding of the aetiology and treatment of many blood diseases. There are, however, two extremely common anaemias the cause of which remains obscure and the treatment unsatisfactory—namely, the anaemia found in association with infection and the anaemia found in association with trauma.

My reasons for considering these two conditions together are: (1) The morphological character of the anaemia is the same and there are striking similarities in the metabolic findings. (2) There is no effective treatment of the anaemia beyond supplying already matured red cells in the form of transfusions while awaiting improvement in the underlying infection or healing of the injured tissues. (3) The available evidence suggests that in both conditions the synthesis of haemoglobin is in some way at fault and that this failure of haemoglobin synthesis is responsible for the anaemia.

In discussing the anaemia both of trauma and of infection it must be remembered that in recent years the picture has almost invariably been complicated by treatment with the sulphonamides, which may themselves affect haemopoiesis (Rimington, 1939). Further, trauma is likely to be complicated by infection, and in some instances the reverse may occur—for example, the presence of osteomyelitis or empyema may necessitate operative intervention. However, relatively simple cases of each have been recorded (Saifi and Vaughan, 1944 ; Howard, 1945) in which anaemia is still found.

Anaemia of Sepsis: Morphological Characteristics

In considering the morphological character of anaemia associated with sepsis it is probably important to differentiate between acute and severe infections and more chronic infections, though it is difficult to know how best to make the distinction. In a previous study (Saifi and Vaughan, 1944) the presence of an infection of longer than three months was regarded as chronic, while anything less than three months was regarded as acute. It might be wiser to make the distinction depend rather on the virulence and nature of the infectious process than on its duration.

Anaemia Associated with Virulent Infection

In certain fulminating infections, such as with *Clostridium welchii*, the anaemia is certainly haemolytic and often megalocytic. Other scattered examples of proved haemolytic anaemia associated with severe infection characterized by a high colour index and sometimes increased red-cell fragility have been described (Brown *et al.*, 1944 ; Mollison, 1947). Such cases, however, occur as interesting rarities meriting special description. Mollison (1947) reported two unusual cases of hyperchromic anaemia and sepsis—one associated with advanced bilateral tuberculosis, the other with acute osteomyelitis. In both the anaemia was severe —in one there was increased red-cell fragility, in the other it was not recorded. A few similar cases associated with severe sepsis in burns have been described (Brown *et al.*, 1944). Rare cases of hyperchromic megalocytic anaemia unassociated with lesions of the gastro-intestinal tract have also been reported in tertiary syphilis (Tauber and Goldman, 1935).

Blackfan and Diamond (1944) observed 15 infants between the ages of 4 and 16 months in whom a severe megalocytic anaemia developed in association with acute infection and was corrected by the parenteral administration of liver extract. In only one was a prolonged course of liver therapy needed. The remaining children recovered completely after a single course of treatment. The anaemia was associated with a temporary complete achlorhydria. Unfortunately no details are given. Since the anaemia responded to treatment apparently in the presence of infection, it seems possible that it was primary in origin, though even in primary anaemias infection often has an inhibiting effect on the action of haemopoietic factors. Zuelzer and Ogden (1946) reported 26 presumably similar cases in infants 2 to 11 months old in which the bone marrow resembled that of pernicious anaemia—megaloblasts and giant metamyelocytes being present in large numbers. The anaemia was not always megalocytic, but was often associated with leucopenia, neutropenia, and thrombocytopenia. Such cases responded to folic acid or liver extract. It is, however, not altogether clear whether the anaemia followed the infection, or vice versa,

The anaemia associated with Brucella infections also merits special mention. It has been recorded by Calder *et al.* (1939) as being macrocytic and hyperchromic, and by Harris (1941) as being sometimes like pernicious anaemia. I have seen it on at least four occasions with a high colour index and young red and white cells in the peripheral blood—in fact, a leuco-erythroblastic type of anaemia, which caused considerable confusion in diagnosis. Characteristically it is of the normocytic hypochromic type (Cartwright *et al.*, 1946a).

Anaemia Associated with Chronic Infections

The anaemia associated with chronic or non-fulminating infections is normocytic and normochromic in the majority of cases, though it may become somewhat microcytic and

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hypochromic if the infection is of long standing. In 24 cases of infective endocarditis Pepper (1927) recorded a hypochromic type of anaemia associated with both a *Streptococcus viridans* and a haemolytic streptococcal infection. Horder (1926) alone claimed to have found a high colour index in infective endocarditis, but he gave no numerical data. In tertiary syphilis moderate hypochromic anaemia may occur, particularly in untreated cases. It is less pronounced than in the primary and secondary stages (Rosahn and Pearce, 1934; Tauber and Goldman, 1935).

In rheumatic fever the cell size, the mean corpuscular haemoglobin, and the mean corpuscular haemoglobin concentration in one large series varied from low to normal values (Hubbard and McKee, 1939). In chronic rheumatic conditions, especially in women, a hypochromic type of anaemia is common, and is often but not necessarily associated with achlorhydria (Collins, 1935). The severer grades are found in cases of atrophic rheumatoid or infective arthritis.

Josephs (1936) stated that in infants the anaemia tends to be hypochromic and that extreme hypochromia is rare. Blackfan and Diamond (1944) also described a microcytic hypochromic anaemia in infants and a mixed type showing microcytosis and macrocytosis, the latter responding to liver and to iron after recovery from the infectious process, suggesting that there is a deficiency of both.

Rasmussen (1936), reviewing the blood picture in 460 patients with pulmonary tuberculosis, noted a hypochromic type of anaemia in 12% of cases. In 34 non-febrile cases the anaemia responded to liver therapy. In 13 there was widespread tuberculosis involving the intestinal canal, presumably therefore interfering with intestinal absorption. In 10 cases other forms of infection, such as with haemolytic streptococci, were present. Braverman (1938, 1942), from a review both of his own cases and of the literature, concluded that the anaemia in tuberculosis, if present, is usually mild, most commonly hypochromic and microcytic, but sometimes normochromic and normocytic. He found such anaemias in 46% of a series of 509 patients.

Saifi and Vaughan (1944) in 34 cases and Cartwright *et al.* (1946a) in 16 cases of anaemia associated with such infections as osteomyelitis, empyema, infective endocarditis, chronic nephritis, and pneumonia failed to find a macrocytic type of anaemia. The anaemia was mild, normocytic, and normochromic, or slightly microcytic and hypochromic. In a series of 464 cases Wintrobe (1934) found no case of a megalocytic type of anaemia, and hypochromia was observed only in association with blood loss or nutritional deficiency. The anaemia was normocytic or slightly microcytic. Under experimental conditions in animals an anaemia with exactly the same morphological features is produced by the injection of bacteria or by the production of a sterile abscess by turpentine (Robscheit-Robbins and Whipple, 1936; Cartwright *et al.*, 1946b). The injection of bacterial toxins alone does not cause anaemia, suggesting, as will be discussed later, that the essential factor in infections responsible for the anaemia is inflammatory tissue reaction.

Bone Marrow.—The accounts of bone-marrow findings in anaemia associated with sepsis are largely unsatisfactory, as only very partial examination of the skeleton is usually made. In both acute and chronic infections in which we examined the long bones from arm and leg and wedges from sternum, vertebral column, and pelvis we found active marrow often in excess of normal. All patients showed considerable erythroblastic activity though there was excessive leucopoiesis. In some instances there was myeloid activity of the spleen (Saifi and Vaughan, 1944).

Metabolic Characteristics of the Anaemia of Sepsis

In recent years there has been an increasing amount of data concerning what may be described as the metabolic characteristics of the common anaemia found in association with sepsis.

Serum bilirubin is within normal limits (Vaughan and Saifi, 1939; Saifi and Vaughan, 1944; Cartwright *et al.*, 1946a).

Plasma iron is low (Heilmeyer and Plötner, 1937; Schafer, 1940; Hirvonen, 1941; Bröchner-Mortensen and Stein, 1942; Cartwright *et al.*, 1946a). The fall in plasma iron immediately follows the infectious process even in those cases in which no anaemia develops. The normal range for humans is 120±30 μg. per 100 ml., while in 16 cases of anaemia associated with infections recorded by Cartwright *et al.* (1946a) the values ranged from 15 to 40 μg. The hypoferraemia persists so long as the infection continues, and returns to normal more slowly than the haemoglobin or red cells.

Serum Copper.—On the other hand the serum copper is raised. The normal range determined by Cartwright *et al.* (1946a) was 116±20 μg. per 100 ml. The value in the 16 patients already mentioned was 200–262 μg. with two exceptions.

Erythrocyte Protoporphyrin.—This porphyrin—protoporphyrin type III, from which haematin is formed by conjunction with iron—was with one exception increased in 11 cases studied by Cartwright *et al.* (1946a). The normal range is 20–50 μg. per 100 ml. of red cells. In the patients studied it was increased two to fourteen times above normal, reaching a maximum in one instance of 634 μg. per 100 ml. of red cells. This rise occurs slowly during the development of anaemia and returns slowly to normal after recovery.

Urinary and Faecal Coproporphyrin.—Vaughan and Saifi (1939) recorded an increase of both coproporphyrin I and III in the urine: an average of 427.1 μg. daily was found in one patient; in another there was an increase of coproporphyrin I with only a trace of III; in a third there was an increase in urinary porphyrin but not enough for identification. The faecal porphyrin consisted of a chloroform-soluble fraction (protoporphyrin deuteroporphyrin) and an insoluble coproporphyrin fraction containing coproporphyrin III. Cartwright *et al.* (1946a) also reported an increase in urinary coproporphyrin but did not differentiate the type. A similar increase in coproporphyrin III excreted in infections in the urine has been noted by Rimington and Hemmings (1938), by Curphey and Solomon (1938), and by Watson and Larson (1947), particularly in acute poliomyelitis. The last-named workers recorded an increase of coproporphyrin I in certain infections, particularly infectious hepatitis.

Faecal Urobilinogen.—There are relatively few data available on urobilinogen excretion in anaemia associated with infection. Eppinger and Charnas (1913) noted a normal figure in a patient with anaemia and pulmonary tuberculosis. Bauman (1921), using a rather unsatisfactory method of estimating, recorded normal figures in two cases of infectious endocarditis. Weiss (1930) noted a patient with tuberculous glands who excreted 56 μg. of urobilinogen daily and three cases of pulmonary tuberculosis with figures ranging from 54 to 132 μg. daily. Paschkis (1933) recorded a case of infective endocarditis with a daily excretion of 228 μg., and Heilmeyer and Plötner (1937) quoted a case of rheumatic polyarthritis with an absolute excretion of 77 μg. daily. Watson (1938) recorded a patient with chronic infectious arthritis in whom the excretion was 60 μg. daily. Our own series of eight cases, the largest available, showed no increase above normal in seven patients and in the eighth an increase so slight as to be insignificant, the upper figure for normal in men being taken as 280 μg. (Vaughan and Saifi, 1939). The same results were obtained when excretion was related to the total circulating mass of haemoglobin rather than expressed in absolute amounts.

Urobilinogen in Urine.—We (Vaughan and Saifi, 1939) observed no increase in urinary urobilinogen, but increases have been noted by other workers (Harris, 1927; Weiss, 1930; Watson, 1938; Curphey and Solomon, 1938; Hubbard and McKee, 1939).

Plasma Proteins.—In the series of cases investigated by Cartwright *et al.* (1946a) the plasma proteins were within the

normal range, varying from 5.9 to 7.4 g.% and in those patients examined the relative proportions of albumin and globulin were not disturbed. Peters and van Slyke (1931) reported, however, that in chronic infection the plasma albumin concentration may be low, and one or two instances of low total protein are recorded in association with rheumatic fever and tuberculosis by Bing (1946) in his study of hypoproteinaemia. Grossman *et al.* (1945) in a series of patients with known negative nitrogen balance found normal levels for both total protein and plasma albumin. Wintrobe *et al.* (1947b) also stated, without giving evidence, that the albumin may be low.

Nitrogen Excretion.—A negative nitrogen balance develops in the presence of infection (Peters, 1944 ; Grossman *et al.*, 1945). Nitrogen excretion is very greatly increased in acute infections and to a considerable but less extent in chronic infections (Grossman *et al.*, 1945). The increased nitrogen is excreted in the urine in the form of urea and ammonia. Excretion of creatinine is unchanged. This loss of nitrogen is not definitely related to the febrile reaction (Grossman *et al.*, 1945) in acute infections ; it may continue after the patient has become afebrile, and in certain chronic infections it may not continue in spite of continued fever.

Similar changes in blood chemistry are found in experimental animals after the production of a sterile abscess by turpentine injections (Cartwright *et al.*, 1946b). The significance of these metabolic changes in explaining the aetiology of the anaemia is discussed later.

Anaemia of Trauma

During the war observers investigating the blood picture of air-raid and battle casualties were struck by the fall in haemoglobin level that occurred after injury. It was repeatedly discussed, though with the exception of cases of severe burns it received little comment in the literature (Freebody, 1943–4 ; Vaughan *et al.*, 1946). A similar anaemia may occur after operative intervention which is not preceded by injury (Seaman and Ponder, 1943) and which, as in the cases studied, is not complicated by sepsis or treatment with sulphonamides ; the latter often disturbs the picture of trauma. The available data on which to base a description of the anaemia are scanty—in our own series there were only 14 cases, and in none were blood volumes estimated. The picture; however, was similar to that seen in sepsis: a normocytic normochromic anaemia which in some instances became hypochromic and microcytic. This anaemia occurred even with slight trauma—for instance, in a man with a simple fracture of the patella.

During the period of falling haemoglobin the reticulocyte count is not raised, but during the period of regeneration there is a rise, often only within normal limits. In the few observations made on red-cell fragility it was not increased. Increased red-cell fragility has been described in the anaemia following severe burns (Shen and Ham, 1943), but it is possible that this results from actual injury to the red cells at the time of burning (Shen and Ham, 1943 ; Brown *et al.*, 1944). In such cases typical spherocytosis is found in the stained films.

Bone Marrow.—No quantitative or qualitative studies have been made of the bone marrow in anaemia associated with trauma.

Metabolic Characteristics

With the exception of nitrogen metabolism little is known of the metabolic characteristics of anaemia associated with trauma.

Serum Bilirubin.—In the few patients we studied the plasma bilirubin was normal (Vaughan *et al.*, 1946), though directly after the injury it tended to be higher than it was during the period of a rising haemoglobin.

There is no information about the level of the plasma iron or copper, the erythrocyte content of coproporphyrin, or the excretion of coproporphyrin. Observations on faecal urobilinogen are unconvincing (Maclagan, 1945).

Urinary Urobilinogen.—Though in studying air-raid and other civilian casualties quantitative examinations were not made, we were struck with the frequency with which we found considerable quantities of urobilinogen in the urine.

Nitrogen Excretion.—The negative nitrogen balance found in association with trauma is a striking and constant feature emphasized by many observers (Cuthbertson, 1935–6, 1944 ; Howard, 1945 ; Stevenson and Bensley, 1947). It occurs after injury or in post-operative conditions. It cannot be entirely prevented by giving high-protein diets, though it can be decreased in severity (Stevenson and Bensley, 1947). During the first ten days after injury nitrogen corresponding to more than 8% of the total body protein may be excreted (Himsworth, 1946–7). On a good diet with approximately 120 g. of protein and 3,000 total calories the average loss of nitrogen in a series of fracture cases was 225 g., or in terms of total protein 1,400 g. This negative balance lasted for an average of 35 days, reaching its maximum at about the sixth day. The recovery was slow. In a group of operative cases the same occurred, but the average loss was only 45 g. and the duration averaged nine days (Howard, 1945). The great difference from patient to patient is noticeable. The excretion is much less in those ill-nourished.

Blood Urea.—Immediately following injury there is a rise in blood urea, which falls to normal levels within the next few days (Vaughan, 1943 ; Taylor *et al.*, 1943).

Plasma Protein.—After injury, burns, or operative intervention there is often a fall in total plasma protein, but even in those cases in which the total plasma protein remains normal there is a fall in albumin, compensated by a rise in globulin and a rise in fibrinogen (Chanutin *et al.*, 1938 ; Taylor *et al.*, 1943 ; Elman, 1944 ; Croft and Peters, 1945 ; Vaughan *et al.*, 1946). This finding occurs after slight injury and is associated with only mild degrees of anaemia.

There are thus many striking points of similarity in the morphological and biochemical characteristics in the anaemia associated with sepsis, with sterile inflammatory abscesses produced experimentally, and with trauma. For instance, the anaemia is usually normochromic and normocytic, though it may become hypochromic and microcytic ; there is no significant reticulocytosis ; red-cell fragility is normal ; and in all points on which evidence is available the striking changes noted in metabolism are similar (see Table).

Haemopoietic and Metabolic Findings in the Anaemia Associated with Sepsis and Trauma

	Sepsis	Trauma
Type of anaemia	Normochromic normocytic; hypochromic microcytic	Normochromic and normocytic
Reticulocytes	Raised after recovery from sepsis	Tend to rise with increasing Hb
Red-cell fragility	Normal	Normal (except some burns)
Bone marrow	Active	Unknown
Plasma proteins	Scanty data; low; albumin down?	Normal or low; albumin down; globulin up
Plasma bilirubin	Normal	Normal
Serum iron	Low	?
Serum copper	High	?
Erythrocyte coproporphyrin	,,	?
Urinary and faecal coproporphyrin	,,	?
Faecal urobilinogen ..	Normal	?
Urinary urobilinogen ..	May be high	May be high
Nitrogen excretion ..	Raised; negative balance	Raised; negative balance
Blood urea	Not known	Increased
Treatment	Transfusion; ? cobalt	Transfusion
Survival transfused cells ..	Normal	Normal ?

Treatment

Iron and liver are in general ineffective in the treatment of either condition. There are certain cases of megalocytic hyperchromic anaemia in infants associated with sepsis

which are reported to respond to treatment with liver extract or folic acid. There are cases of hypochromic anaemia associated with both tuberculosis and "rheumatism" which respond to iron, but such cases are exceptional. Recent experimental results on animals suggest that cobalt is worthy of trial (Wintrobe *et al.*, 1947b). Cobalt has long been recognized as a haemopoietic factor in certain anaemias of sheep (Underwood and Filmer, 1935), and it has proved possible to produce experimental polycythemia in many experimental animals by administration of this metal. Wintrobe and his colleagues (1947b) found that rats which became anaemic after the formation of turpentine abscesses—a condition which appears in its metabolic findings to be comparable to infection—responded well to treatment with cobalt. The anaemia was cured though plasma protein and iron remained low. If cobalt was given simultaneously with the turpentine no anaemia developed. The significance of this finding is discussed later.

There is some evidence that a high-calorie high-protein diet may be of value in treating certain aspects of the disturbed biochemistry of trauma (Taylor *et al.*, 1943; Croft and Peters, 1945; Stevenson and Bensley, 1947). Howard (1945) and Stevenson and Bensley (1947) have shown that a high-protein high-calorie diet exerts some sparing action upon protein breakdown, but however much protein is given a negative balance cannot be prevented.

Transfusion of compatible whole blood is at present the only means of restoring haemoglobin and red-cell levels in both types of anaemia.

Aetiology of the Anaemia

What is the cause of this anaemia which is found clinically in association with either sepsis or trauma and which can be produced experimentally by sepsis, by trauma, and by sterile abscesses? It might be claimed that the anaemia of trauma was due to blood loss at the time of injury, but this alone is not sufficient to account for the fall of haemoglobin, though possibly it may be a contributory factor. For instance, the anaemia occurs after a slight injury such as fracture of the patella when there is no obvious blood loss, and it is progressive. Seaman and Ponder (1943) in a study of anaemia following operative intervention estimated the amount of blood lost by measuring the haemoglobin content of all swabs used and found that the fall in haemoglobin was greater than that accounted for by operative loss.

These three conditions have in common the breakdown of body tissues. It is tempting, therefore, to consider the possibility that the anaemia and accompanying metabolic disturbances are in some way dependent upon this common factor. Tissue breakdown is known to liberate many foreign substances, and one or more of these might exert a disturbing effect upon the erythron, causing aplasia, haemolysis, or dyserythropoiesis. On the other hand, the increased demand for tissue-building materials might result in a conditioned deficiency of haemopoietic factors and of other disturbances in metabolism.

It is justifiable to conclude that the anaemia is not dependent upon aplasia of the marrow, since such aplasia is not found, or upon haemolysis, since except in rare instances no destruction of red cells can be demonstrated. In these exceptional cases (Brown *et al.*, 1944; Mollison, 1947) the patient destroys not only his own red cells but also the transfused red cells from a healthy donor unduly fast. In the majority of cases there is no evidence of increased haemolysis. The serum bilirubin level is normal; there is no increased excretion of faecal urobilinogen (Vaughan and Saifi, 1939), which is present invariably in haemolytic anaemias; and there is no increased detectable destruction of transfused healthy red cells (Brown *et al.*, 1944; Mollison, 1947). The increased urinary excretion of coproporphyrin III already noted (Vaughan and Saifi, 1939) might on theoretical grounds be derived from red-cell breakdown, since only coproporphyrin III is incorporated in the haemoglobin molecule, coproporphyrin I being probably a side-product in the formation of coproporphyrin III. Coproporphyrin III, however, is believed not to be found under any circumstances as a breakdown product of haemoglobin (Watson and Larson, 1947). In known haemolytic anaemias coproporphyrin I is recorded in excess only in the urine (Watson, 1938). The amounts of coproporphyrin III found are also small and are not sufficient to account for the degree of anaemia. It would therefore appear more likely that a disturbance of synthesis at a later stage accounts for the increased excretion of coproporphyrin III (Dobriner *et al.*, 1937; Rimington, 1938).

Dyserythropoiesis, or faulty red-cell production, may be brought about by a variety of means, the commonest of which is a deficiency of haemopoietic factors. There clearly is no lack of the well-recognized haemopoietic factors, since they are ineffective in treatment. The response to cobalt of experimentally produced anaemia of sepsis in rats, mentioned above, suggests that a deficiency of cobalt may be of aetiological significance; further that there may be a conditioned deficiency of one or more amino-acids. Analysis of the facts concerning the metabolic disturbances present in this type of anaemia, details of which have already been given, points to a disturbance in the synthesis of haemoglobin which may prove to be due to such amino-acid deficiencies.

The stages in the synthesis of haemoglobin can be roughly shown as follows:

1. Precursor pyrrole substance → Copro I. / Copro III.
2. Coproporphyrin III + iron → haematin.
3. Haematin + globin → haemoglobin.

Traces of both copper and cobalt may play a part in either stage 2 or 3.

In the anaemia under consideration there appears to be no failure in stage 1—the formation of coproporphyrin from a precursor—since there is an excess of coproporphyrin in the red cells (Cartwright *et al.*, 1946a). The evidence suggests rather that there is a failure in stage 2 (the junction of iron and coproporphyrin to form haematin) or in stage 3 (the junction of haematin and globulin).

What is known of stage 2? There is an excess of coproporphyrin III excreted in the urine, which may well be due to failure to complete the formation of haematin. There is a lack of iron in the circulating plasma, as shown by the persistent hypoferraemia which precedes the development of the anaemia (Cartwright *et al.*, 1946a). This hypoferraemia is *not* due to an actual lack of iron. Continuous infusion of iron sufficient to maintain a normal plasma iron is unable to bring about haemoglobin synthesis in the presence of infection (Greenberg *et al.*, 1947a). Wintrobe and his colleagues (1947a) by the use of radioactive iron found that iron administered intravenously to a pig with iron deficiency is readily taken up into the haemoglobin molecule, but in the presence of inflammation the uptake of iron to form haemoglobin is greatly decreased, though it returns rapidly to normal if the inflammatory process is checked. The iron is, however, taken up by the liver and spleen—the normal storage depots—in greatly increased quantities. No significant quantity is found in

the inflamed tissues (Greenberg *et al.*, 1947b). Iron is therefore not the limiting factor in the anaemia, though the diversion of iron from the plasma to the storage depots occurs. Wintrobe (1947b) suggested that this diversion is due to lack of cobalt, which they assume is essential to stage 2, the synthesis of haematin. In some way, therefore, not yet clear, the presence of infection necessitates the presence of abnormal amounts of cobalt for the synthesis of haematin. This is, however, extremely speculative. Cobalt might equally well be required in stage 3 of haemoglobin synthesis—namely, the junction of haematin and globin.

In dealing with the anaemia of trauma the hypothesis was advanced from a consideration of a different series of facts that possibly a failure of protein synthesis, presumably globulin, was responsible for this anaemia so affecting the third stage of haemoglobin synthesis (Vaughan *et al.*, 1946). We were impressed by the association of anaemia with a striking fall of albumin and rise of globulin in the plasma in patients without necessarily altering the total circulating protein. This change in relative protein levels is accompanied by greatly increased nitrogen excretion. How far it is related, if at all, to the remarkable changes in at least one proteolytic system of the blood —namely, that concerned with fibrinolysis—also occurring after injury is not yet clear (Macfarlane and Biggs, 1946; Biggs *et al.*, 1947). We must, however, include the anaemia of trauma and of sepsis among the many symptoms indicative of a wide disturbance of protein metabolism.

The cause of this disturbance is obscure. It may be due to disordered liver function following the action of tissue breakdown products—the presence of urobilinogen in the urine and the change in level of albumin and globulin so characteristic of this type of anaemia being also characteristic of liver disturbance. It may, however, be dependent upon a raiding of the protein stores of the body for some particular amino-acid required to restore injured tissues (Croft and Peters, 1945; Howard, 1945; Himsworth, 1946–7). In other words, after injury or infection the body suffers from a conditioned deficiency of some particular amino-acid. It is known, for instance, that both methionine (Glynn *et al.*, 1945) and lysine (Harris *et al.*, 1943) are essential for haemopoiesis. The effects on both the disturbed nitrogen balance and the anaemia of feeding these amino-acids (Croft and Peters, 1945) are at present conflicting.

Summary

It is suggested that the anaemia of trauma and sepsis is dependent upon a disturbance of haemoglobin synthesis affecting chiefly the globin element. This deficiency of globin is part of a wider disturbance of protein metabolism dependent upon the action of breakdown products liberated from the injured tissues or by the need of injured tissues for special amino-acids. Preliminary experimental observations suggest that possibly cobalt may be concerned at some point in this chain of events, but at present the importance of cobalt should not be exaggerated until its value in human cases has been confirmed.

From a practical point of view, apart from all theories as to the aetiology of the anaemia, it is important to treat patients with both trauma and sepsis on a high-protein diet, relieving the anaemia when severe with replacement therapy. It must be remembered, however, that it is not sufficient to provide a high-protein diet: the patient with sepsis or injury rarely feels hungry, and competent nursing care is essential in order to ensure that the necessary food is taken.

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The United Nations International Children's Emergency Fund held 14 meetings at Lake Success from Sept. 29 to Oct. 8, 1947. A survey has shown that at least 60 million children in Europe and the Far East need supplementary feeding and other help urgently. The organization now has sufficient funds to start some relief work, though more are still required. Shipments of dried milk, fats, and canned meats from the U.S.A. and Canada have already reached their European destinations.

THE EFFECT OF FOOD SUPPLEMENTS ON POORLY FED WORKERS IN BRUSSELS IN JANUARY, 1945

BY

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In a previous paper (Bastenie, Macrae, Smart, and Yudkin, 1945) the diet of the families of a group of employees at a works in Brussels was described in detail. In order to determine whether the theoretical deficiencies which were found to exist had caused any marked deterioration the effects of the addition of a known supplement to the diet of these men have been investigated. This paper gives an account of the work.

Methods

Experimental Plan

The men, 18 in number, were divided into Groups A and B, containing 10 and 8 subjects respectively. During a preliminary control period of one week two 24-hour samples of urine were collected four and two days before the beginning of the experiment; throughout this period the men were given practice on the use of a dynamometer, and on the last day each man was weighed, the strength of his grip was measured, and an estimate was made of the degree of irritability of his biceps muscle to mechanical stimulation.

A highly nutritious food supplement (Table I) was given to Group A for ten days—designated the first experimental period. During this time Group B received no supplementary food and acted as a control. Four 24-hour samples of urine were collected from each member of both groups on the first, fourth, seventh, and tenth days, and at the end of the period the weight, grip strength, and muscle irritability were again determined. At each examination care was taken that the subjects arrived in random order so that the observer did not know to which group they belonged.

For three weeks after the first experimental period none of the men in either group received any supplement. During this time, however, one man in Group B became ill and retired from the experiment, and two new men were allocated to this group. A second experimental period of ten days began at the end of the three-weeks interval. Measurements were made of weight, grip strength, and muscle irritability at the beginning and end of the second experimental period, but no samples of urine were collected. During these ten days the men in Group B received a supplement of food similar to but not identical with that given in the first experimental period (Table II), whereas those in Group A received no supplement and acted as controls. During both periods the supplement was consumed under supervision, and emphatic instructions were given to all the subjects that they must continue to eat the usual amount of food at home. Unfortunately supervision could not be exercised over their intake at home.

Measurement of Weight.—The men were weighed at approximately 10.30 a.m. on each occasion. Trousers, trunks, and stockings were worn, but the rest of the clothes were removed before weighing.

Estimation of Grip Strength.—The strength of the grip of the right hand (all subjects were right-handed) was determined on a grip dynamometer, with the right arm close to but not touching the side of the body, the elbow flexed to a right-angle, and the forearm fully supinated and parallel with the ground. Practice was allowed for several days, and when this appeared to be sufficient the estimations were made. Five readings were taken at intervals of 30 seconds. There was no evidence of tiring.

Estimation of Muscle Irritability.—In order to estimate the irritability of the biceps muscle to mechanical stimulation the elbow was flexed to approximately a right-angle, the forearm supported, and the subject told to relax his arm muscles as fully as possible. The centre of the biceps muscle belly was then gripped transversely and quickly nipped and rolled between the observer's thumb and forefinger, the operation being somewhat painful to the subject.

TABLE I.—*Daily Intake of Nutrients by Subjects Receiving Food Supplement During Period 1*

	Kilo-calories	Protein	Fat	Carbo-hydrate	Calcium	Iron	Vitamin A	Aneurin	Nicotinic Acid	Ribo-flavin
		(g.)	(g.)	(g.)	(mg.)	(mg.)	(i.u.)	(μg.)	(mg.)	(μg.)
Sweet egg block (58 g.)	334	17·1	22·3	15·5	203	3·5	1,055	37	0·4	627
Dehydrated cheese block (58 g.)	394	20·0	33·3	0	626	0·5	1,045	22	0·2	346
Milk block (25 g.)	136	4·9	8·0	11·0	180	0·1	298	48	0·2	250
Egg custard block (44 g.)	255	9·3	16·5	16·4	248	0·8	440	62	0·1	377
Cocoa block (25 g.)	129	5·0	7·0	11·5	3	0·8	205	39	0·2	196
Total from supplement	1,248	56·3	87·1	54·4	1,260	5·7	3,043	208	1·1	1,796
Estimated nutrition value of normal ration*	2,460	74·2	50·0	428·3	488	17·3	6,900	1,887	14·1	1,280
Estimated total intake	3,708	130·5	137·1	482·7	1,748	23·0	9,943	2,095	15·2	3,076

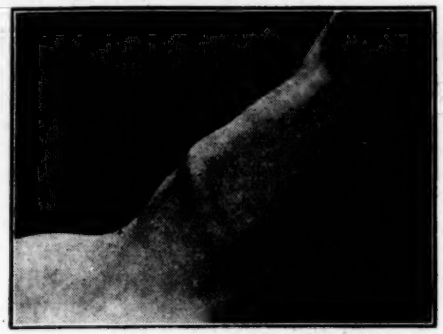
* Calculated from data given in previous publication (Bastenie *et al.*, 1945).

TABLE II.—*Daily Intake of Nutrients by Subjects Receiving Food Supplement During Period 2*

	Kilo-calories	Protein	Fat	Carbo-hydrate	Calcium	Iron	Vitamin A	Aneurin	Nicotinic Acid	Ribo-flavin
		(g.)	(g.)	(g.)	(mg.)	(mg.)	(i.u.)	(μg.)	(mg.)	(μg.)
Sweet egg block (58 g.)	334	17·1	22·3	15·5	203	3·5	1,055	37	0·4	627
Dehydrated cheese block (58 g.)	394	20·0	33·3	0	626	0·5	1,045	22	0·2	346
Milk block (50 g.)	272	9·8	16·0	22·0	360	0·2	596	96	0·3	501
Dehydrated beef (50 g.)	280	25·0	20·0	0	8	6·0	75	15	7·0	700
Total from supplement	1,280	71·9	91·6	37·5	1,197	10·2	2,771	170	7·9	2,174
Estimated nutrition value of normal ration*	2,460	74·2	50·0	428·3	488	17·3	6,900	1,887	14·1	1,280
Estimated total intake	3,740	146·1	141·6	465·8	1,685	27·5	9,671	2,057	22·0	3,454

* Calculated from data given in previous publication (Bastenie *et al.*, 1945).

In all subjects a raised ridge appeared in the region stimulated (see illustration). The time during which this ridge persisted was taken as an index of the irritability of the muscle. Five estimations, all on the right biceps muscle, were made on each occasion.



Photograph showing response of biceps muscle to mechanical stimulation.

Urinary Analysis.—The total volume of each of the 24-hour samples of urine was measured, and after acidification with 4 ml. of 2N. H_2SO_4 per 100 ml., was kept for analysis. The total nitrogen was estimated by the Kjeldahl method.

Food Supplements.—All subjects normally had a small midday meal at the works. During the periods of supplementation the experimental groups received highly nutritious dehydrated foods at midday in addition to their normal factory meal. The food supplements consisted almost entirely of milk, cheese, butter, and eggs; in the second experimental period beef was added. The nutritive value of the supplements given during the two periods is shown in Tables I and II, respectively. The dehydrated food, apart from the beef, was specially prepared by the Low Temperature Research Station, Cambridge. After dehydration the food was moulded into blocks each weighing about 50 g. and suitable for one helping (see de Rousset-Hall and Ingram, 1945). The advantages of this arrangement are many: there is no need to weigh the food before each meal, since it is only necessary to count a suitable number of blocks for reconstitution; there is an assured uniformity in the food given on different days, since the whole of the amount required for the experiment can be prepared in advance; the keeping qualities are excellent; the low weight and small bulk facilitate transport; and the uniformity of the experimental diet enables a great saving to be made in the analysis of foodstuffs.

Results

The average values of weight, grip, and muscle irritability of subjects are shown with the appropriate standard errors in Table III. It will be seen that, whereas there were no significant changes during the experimental periods in the control group, the group which received a supplement in both experimental periods did change, there being an increase in weight and grip and a decrease in the length of time for which local contraction of the biceps muscle persisted after mechanical stimulation.

The results obtained from these measurements may be expressed in a different way. Seventeen of the subjects were on different occasions in both the experimental and the control group. The different changes in these individuals when they acted in each capacity may therefore be compared. Table IV presents the results expressed in this way. It will be seen that the differences are not likely to be due to chance.

TABLE IV.—*Average Difference in Change in Weight, Grip, and Muscle Irritability of 17 Subjects When Acting as Control and When Receiving Supplementary Food*

Observation	I. Average Change While Acting as Controls	II. Average Change While Receiving Food Supplement	Difference in Changes (II–I)	S.E.	t	P
Weight (kg.) ..	+0·159	+1·271	+1·112	0·30	3·71	0·001
Grip (kg.) ..	+0·71	+3·18	+2·47	0·72	2·91	0·01
Muscle irritability (secs.)	−0·43	−1·76	−1·33	0·46	2·84	0·012

The average urinary nitrogen values for the first experimental period are shown in Table V. Two subjects have been excluded from Group A and one from Group B in calculating these averages, since the 24-hour specimens of urine presented by them were obviously false. Both the experimental and the control group showed a significant increase in urinary nitrogen excretion during the experimental period; although the increase was somewhat greater in the experimental group than in the control group, this might possibly have been due to chance.

TABLE V.—*Average Urinary Nitrogen Excretion on Certain Days During the Preliminary Period and Period 1*

Group	No. of Subjects	Before Experimental Period		Experimental Period			
		4th Day	2nd Day	1st Day	4th Day	7th Day	10th Day
		(g.)	(g.)	(g.)	(g.)	(g.)	(g.)
A (experimental)..	8	9·05	7·98	9·92	12·67	10·86	10·15
B (control) ..	7	8·23	10·74	10·97	10·97	10·87	10·57

Significance of differences of changes in Groups A and B: P = 0.053

Discussion

The workers under investigation obtained from their ordinary diet about 12 g. of nitrogen a day (Bastenie *et al.*, 1945). They excreted 9 g. in the urine, and, assuming the faecal excretion to be about 1.5 daily and that the same amount was lost in sweat (Cuthbertson, McCutcheon, and Munro, 1937), it would seem that they were in nitrogen equilibrium.

TABLE III.—*Effect of Food Supplements on Weight, Grip, and Muscle Irritability*

	Group	Period 1 (Group A: Food Supplement) (Group B: Control)				Period 2 (Group A: Control) (Group B: Food Supplement)			
		Mean at Beginning of Period	Mean at End of Period	Mean Change During Period	S.E. of Change	Mean at Beginning of Period	Mean at End of Period	Mean Change During Period	S.E. of Change
Weight (kg.)	A	63·1	64·4	1·3	0·33	64·1	64·3	0·2	0·25
	B	60·6	60·6	0·0	0·27	59·2*	60·5*	1·3	0·29
Grip (kg.)	A	44·8	47·8	3·0	1·11	47·3	48·1	0·8	0·70
	B	42·0	42·1	0·1	0·89	40·6*	44·0*	3·4	0·58
Muscle irritability (secs.)	A	4·65	2·67	−1·98	0·59	2·83	2·75	−0·08	0·25
	B	4·43	3·62	−0·81	0·51	3·87*	1·97*	−1·90	0·40

* One subject is not included in these figures, as he became ill during the second experimental period. Two new subjects are included in Group B for the same period.

While the men were acting as experimental subjects both the protein and the calorie intakes were increased to a theoretical level of about 130–145 g. of protein and 3,700 calories daily. It was of course impossible to guarantee that they ate as much at home as they did when not receiving the supplement, although they were asked to do so: the above values are maxima, and it is probable that the actual total intakes were somewhat lower.

Under the dietary conditions resulting from the consumption of the highly nutritious food supplement the daily urinary output of nitrogen rose from an average of 8.5 g. to 10.9 g., an increase of only 2.4 g.; the control Group B showed an increase from 9.5 g. to 10.8 g. In Group A, allowing for sweat and faecal loss, there must have been a total daily elimination of nitrogen per man of about 14 g. Since, provided the experimental subjects continued to eat the same foods at home when they were receiving the supplement, they had a daily nitrogen intake of about 21 g. per man, they must have retained about 7 g. of nitrogen per man daily. According to Rubner (1898), 1 g. of retained nitrogen gives 33 g. of tissue, mostly muscle. Thus in ten days the experimental subjects (Group A) should have gained 2.3 kg. In fact, they gained on the average 1.3 kg. This difference between the theoretical gain in weight and that which was actually found was not likely to be due to a loss in body fluids, since the 24-hour urinary volumes of subjects in Group A were never significantly different from those of the control subjects or from the volumes obtained during the preliminary period. It is improbable that either the experimental error or inaccuracies in Rubner's factor could account for all the discrepancy, and it seems most likely that the men did not in fact continue to eat the same amount as usual in their homes while receiving the experimental supplement. If we assume that Rubner's factor is reasonably accurate, they should have been receiving 100 g. of protein per man daily; in other words they must have consumed about 60% of the protein in their normal daily ration at home while receiving the food supplement. Cuthbertson *et al.* (1937) and Cuthbertson and Munro (1937) showed that subjects who were adequately fed retained over a period of eight days about 40% of the nitrogen of a milk or similarly constituted food supplement to their normal diet. In the present experiment the food supplement had a calorie–protein ratio similar to that of the supplement fed by Cuthbertson *et al.* The subjects in Group A excreted on the average an extra 2.4 g. of nitrogen per man daily while receiving the supplement and those in Group B (control) 1.3 g. during the same period. Thus it can be considered that the extra food received by Group A resulted in an increase in the daily urinary nitrogen excretion of about 1 g. per man, which on the basis of Cuthbertson's findings would have resulted from an extra intake of about 1.7 g. of nitrogen or about 10 g. of protein. They were, however, supposed to be receiving an extra 56 g. of protein per man daily, and, calculated theoretically on their gain in weight, using Rubner's factor, they received at least 25 g. extra per man daily. The nitrogen retention from the food supplement was thus more than twice as great as that found by Cuthbertson *et al.* (1937) and Cuthbertson and Munro (1937) for normally fed individuals. On these grounds it seems reasonable to conclude that the experimental subjects were in equilibrium on a plane of nitrogen metabolism lower than that encountered in subjects who are considered to be well fed.

There was a gain in grip strength and a decrease in muscle irritability to mechanical stimuli during the experimental period, and it is of interest to consider whether these factors can be related to the gain in weight or to the nitrogen retention. Consideration of the variations in weight, grip, and muscular irritability of each of the subjects in the present investigation revealed no significant correlation between change in weight and change in muscle irritability or change in grip strength, between nitrogen retention and change in muscle irritability or change in grip strength, or between change in muscle irritability and change in grip strength.

The abnormal irritability of muscles to mechanical stimuli was first described by Schiff (1858–9) and later investigated in greater detail by Curschmann (1905), Langley and Hashimoto (1918–19), and Denny-Brown and Pennybacker (1938). There is no very definite evidence that would indicate which biochemical lesion produces the hyperirritability; the most that can be said is that the phenomenon is increased by the conditions which interfere with normal muscle metabolism. There seems to be little doubt that the duration of the ridge in the Belgian workers (about 4.5 seconds) was abnormally long before they received the supplement (the mean duration in healthy R.A.F. subjects has been found to be 2.1 seconds), and that the supplementation did result in a decrease in the duration of the phenomenon. Initially also there was a strikingly significant inverse correlation between the strength of grip and the duration of the ridge of localized contraction following mechanical stimulation ($r = -0.77 \pm 0.092$).

The gain in grip strength which occurred during supplementation is also statistically significant, but unfortunately it is impossible to eliminate the psychological factor. There is likely to be a greater urge to try hard in a subject who is receiving extra food than in one who is living on short rations, and it is impossible to provide a "dummy" substitute for food in control subjects.

In conclusion it has been shown that the addition of supplementary foodstuffs to the defective diet of Belgian workers produced a considerable retention of nitrogen, a gain in weight, an increase in muscle strength, and a decrease in the irritability of muscle to mechanical stimuli. None of these changes, however, could be correlated when consideration was given to the changes occurring in each individual, nor was it possible to correlate any of the changes with the intake of any particular nutrient.

Summary

A group of workers in Brussels in 1945 who were receiving inadequate food were given a supplement to correct the deficiency, and the effects of this supplement on the weight, the grip, the urinary nitrogen excretion, and the irritability of muscle to nipping were measured; their values were compared with those given by a control group receiving no supplement.

The average weight increased significantly in the experimental groups during the ten days of supplementation, as did the strength of the grip; the duration of the local contraction of the biceps muscle which followed mechanical stimulation decreased significantly.

There was a marked retention of nitrogen during the period of supplementation; the large increase in protein nitrogen intake resulting from consumption of the supplement caused no pronounced increase in urinary nitrogen output.

The significance of myotatic irritability has been discussed and an inverse correlation was shown to exist between it and strength of grip.

No relationship could be demonstrated between individual changes in weight, nitrogen retention, grip, or muscle irritability.

We wish to thank Air Marshal Sir H. E. Whittingham, then Director-General of Medical Services, Royal Air Force, and Air Commodore T. McClurkin, Director of Hygiene, for their encouragement in this work; also the Director of the Electro-Gaz Works, Brussels, for permission to carry out the experiments, the social workers there for their invaluable help, and the subjects for so

willingly submitting to the experimental procedures. The determinations of urinary nitrogen were carried out by Flight-Sergeant G. A. Childs under very great difficulties, and we accord him our thanks and appreciation.

An essential for the carrying out of this experiment was the provision of food blocks, and we thank Dr. F. Kidd, the then Director of the Low Temperature Research Station, Cambridge, and Dr. M. Ingram and Mr. O. de Rousset-Hall of his staff, who supervised the manufacture of the blocks.

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VIABILITY OF STRANGULATED BOWEL

INTERIM REPORT OF SURGICAL SUBCOMMITTEE OF THE CLINICAL RESEARCH COMMITTEE OF THE PUBLIC HEALTH DEPARTMENT OF THE LONDON COUNTY COUNCIL*

This committee is at present organizing a study of the condition and fate of strangulated bowel, with the object of determining the correct operative procedure to be undertaken when confronted with recently strangulated bowel of doubtful viability, and the following preliminary conclusions have been drawn from an initial series of 336 operations.

The main statistical tables form appendices to this report. Where statements in the report require more detailed statistical illustrations reference is given (by a letter in parentheses) to the appropriate paragraph of the notes which follow the main tables.

Causes of Strangulation

In the whole series of cases—68 (20.2%) of which were fatal—the percentage distribution of causes of strangulation, which excluded intussusception, was as follows:

Hernia	Inguinal	31·8	91·9
	Femoral	46·9	
	Umbilical	4·5	
	Incisional	4·8	
	Obturator	1·2	
	Internal	2·7	
By band or adhesions			6·0
By volvulus			2·1

Ultimate Condition of Strangulated Bowel

The main object of the research—namely, the discovery of the features which give a clue to the ultimate fate of the strangulated bowel—may be approached in several ways. These may be briefly enumerated and commented on as follows:

1. If a patient dies of bowel gangrene after the strangulated bowel has merely been replaced in the abdomen when dealing with the strangulating agent, and this has been confirmed at necropsy, then the state of the bowel as noted at operation will give valuable information. The following three cases were reported in which this had occurred.

(i) Case A. B., aged 53. Necrotic purulent ulceration of the mucosa was noted at necropsy. Death occurred eight days after operative relief of strangulation. At the operation it was recorded that 400 cm. of the whole circumference of small bowel was involved, partly by strangulation, partly by secondary mesenteric thrombosis, and that it was plum-coloured with white constriction rings. After release of the strangulation it remained plum-coloured. The bowel was flabby but the surface was shiny, and muscular contractions of the wall were seen. Oxygenation of the patient caused no change in the colour of the bowel. Pulsation was present in the mesenteric vessels.

(ii) Case C. D., aged 34. Gangrene of bowel was discovered at necropsy. Death occurred seven days after operative release of the strangulation. At the operation 50 cm. of the whole circumference of small bowel was found to be plum-coloured but shiny, with normal tonus in the wall. Muscular contractions were seen. Pulsation was present in the mesenteric vessels.

(iii) Case E. F., aged 83. Gangrene of bowel was discovered at necropsy. Death occurred 13 days after operative release of the strangulation. At the operation 60 cm. of the whole circumference of small bowel was found to be plum-coloured but shiny, with oedema of the wall. Muscular contractions were seen. Pulsation was present in the mesenteric vessels.

In each of these cases 50 cm. or more of bowel was involved, but the state of the bowel as noted at operation was no worse than that in many cases which recovered. It seems a reasonable conclusion that risk of subsequent gangrene is greater where a long length of bowel is strangulated than where a short length is involved [Appendix II, (*a*)].

2. If a patient has a secondary operation for gangrene or damage of bowel after having had a simple "replacement," "untwist volvulus," or "divide constricting band," then the state of the bowel as noted at the original operation would give important data. No case was reported in which total gangrene of a segment of bowel occurred after replacing it in the peritoneal cavity, but in two cases stenosis of the bowel, with peritoneal adhesions, supervened, suggesting that some degree of mucosal and perhaps peritoneal damage had occurred and that the replaced bowel was on the borderline of viability:

(i) Case G. H., aged 51. Had replacement of bowel 30 hours after the onset of hernial strangulation. State at original operation: 12.5 cm. of small intestine was strangulated, black in colour, with grey constriction rings, improving in colour after release of strangulation. Surface of bowel was shiny, and wall flabby; muscular contractions in bowel wall were absent, and pulsation in mesenteric vessels was present. Thirty-six days later a second operation was necessary and 20 cm. of ileum was resected for adhesion and stenosis.

(ii) Case J. K., aged 44. Had replacement of 7 cm. of small intestine 9¼ hours after onset of strangulation. At the operation the bowel was plum-coloured and oedematous, with a shiny surface which became mottled after release of strangulation. There were muscular contractions in the bowel wall and pulsation in the mesenteric vessels. Griping abdominal pains followed after discharge from hospital, and 28 days after the first operation a second operation was necessary and the previously strangulated bowel was seen to be stenosed, with peritoneal adhesions.

3. An examination was made for cases where bowel, coloured before or after release of strangulation black, grey, green, or yellow, was replaced. There were 20 patients with bowel of one of these colours, of whom 14 survived, giving a mortality of 30%. Among 216 "replacement" cases in which the bowel colour was normal the mortality was only 9.7% ($\chi^2 = 7.42$; $P = 0.006$).

*The members of the surgical subcommittee are: Mr. J. E. Piercy, New End Hospital; the late Mr. G. F. Stebbing, Lambeth Hospital; Mr. N. C. Tanner, St. James Hospital; Mr. J. R. M. Whigham, St. Andrew's Hospital; †Mr. C. R. Boland, Mile End Hospital; †Mr. F. D. Murphy, Fulham Hospital. The convener of the subcommittee was Mr. Tanner, who with Mr. Stebbing was mainly responsible for the report. The statistical analysis was made by the staff of the statistical section of the Public Health Department under the direction of Mr. B. Benjamin.

† Left the Council's service before the completion of the report.

4. Twenty-one cases were recorded in which muscular contractions in the bowel wall were absent and the bowel was replaced. Fifteen of these survived, giving a mortality of 28.6%, as compared with a mortality of only 8.6% in 197 "replacement" cases with contractions present ($\chi^2=7.95$; $P=0.005$).

5. If pulsation in mesenteric vessels is absent in the strangulated segment of bowel in "replacement" cases the outcome is important. There were two such cases with pulsation absent and neither survived. In 214 "replacement" cases with pulsation present the mortality was 10.7%. The probability of such a difference in mortality occurring by chance is 0.013.

Other Findings

Other items of interest have emerged which are not directly connected with the main research.

Records of the duration of strangulation at time of operation show that inguinal herniae tend to come to operation earlier than femoral herniae (*b*). While there is no significant difference in average age (*c*), the more obvious nature of the lesion, the more insistent pain in the sac (*d*), and the earlier onset of vomiting (*e*) in inguinal cases make this not unexpected. This shorter duration of strangulation probably accounts for the lower mortality in strangulated inguinal herniae. Taking all strangulations together it is found that the case mortality increases with the duration of strangulation, though a larger series of cases will be required before one can expect to find any significant difference between case mortality at 0–6 and 6–12 hours (*f*).

An analysis of the state of the bowel wall for all cases showed that 20.6% were normal, 52.8% were oedematous, 15.3% were flabby, 16.0% were clearly gangrenous, and 5.8% were perforated. The greater percentage of gangrenous and perforated bowel in the femoral herniae is associated with the increased delay before operation and probably also with the increased frequency of Richter herniae in femoral hernia (*g*):

	Inguinal Hernia	Femoral Hernia
Whole circumference involved	89·9%	77·2%
Part of circumference involved	10·1%	22·8%

Operative Procedure

The figures were investigated to see whether they would provide the surgeon with practical guidance to the best type of anastomosis to perform after resection. Of the cases having a resection, 20 were resections and lateral anastomosis, and 9 died—a mortality of 45%; 32 were resections and end-to-end anastomosis, and 18 died—a mortality of 56.3%.

The figures do not show any statistical difference between lateral anastomosis and end-to-end anastomosis ($\chi^2=0.62$; $P=0.43$), and we must await larger numbers before reliable conclusions can be drawn.

The subcommittee wishes to express its thanks to Sir Allen Daley, County Medical Officer of Health, for the encouragement of this research and to all those who have co-operated.

APPENDIX I

TABLE I.—*Preliminary Survey of Strangulated Bowel Research Cards, 1945–6*

	Hernia														No Hernia				Total		
	Inguinal			Femoral			Umbilical		Incisional		Obturator		Internal		Band		Volvulus				
	Rec.	D.	M.	Rec.	D.	M.	Rec.	D.	Rec.	D.	Rec.	D.	Rec.	D.	Rec.	D.	Rec.	D.	Rec.	D.	M.
			%			%															%
A. *Total cases*	95	12	11·2	124	34	21·5	9	6	12	4	2	2	6	3	18	2	2	5	268	68	20·2
Necropsy held	—	2	—	—	12	—	—	1	—	1	—	—	—	3	—	1	—	3	—	23	—
B. *Duration of strangulation at time of operation:*																					
0– 6 hours	17	3	15·0	15	—	—	1	—	1	—	—	—	—	—	1	—	1	—	36	3	7·7
6–12 „	26	1	3·7	25	3	10·7	1	—	1	—	1	—	1	1	3	—	—	—	58	5	7·9
12–24 „	12	2	14·3	22	2	8·3	—	1	5	1	—	—	1	—	—	1	—	1	40	8	16·7
24–48 „	23	2	8·0	23	5	17·9	2	—	3	2	—	—	3	1	1	—	1	—	56	10	15·2
Over 48 „	13	4	23·5	29	22	43·1	4	4	2	1	—	2	—	1	7	1	—	4	55	39	41·5
Not stated	4	—	—	10	2	—	1	1	—	—	1	—	1	—	6	—	—	—	23	3	—
C. *State of bowel wall—operation findings:*																					
Normal	27	—	—	23	1	4·2	4	—	1	—	—	—	2	—	7	—	1	1	65	2	3·1
Oedema	58	5	7·9	67	13	16·3	3	3	8	2	2	1	3	1	6	—	—	—	147	25	14·5
Flabby	6	3	33·3	20	10	33·3	2	1	2	—	—	1	—	—	4	—	—	1	34	16	32·0
Gangrenous	7	5	41·7	11	8	42·1	2	4	2	1	—	—	1	2	3	2	1	3	27	25	48·1
Perforated	4	2	33·3	4	7	63·6	—	1	—	1	—	—	—	—	—	—	—	—	8	11	57·9
Not stated	1	—	—	7	1	—	—	—	—	1	—	—	—	—	—	—	—	—	8	2	—
D. *Operative procedure:*																					
Replacement	85	5	5·6	107	15	12·3	6	2	8	3	1	1	4	—	3	—	1	1	215	27	11·2
Oversew doubtful area	6	1	14·3	10	5	33·3	—	—	—	—	—	1	—	—	2	—	—	—	18	7	28·0
Oversew constriction ring	—	2	100·0	4	3	42·9	1	—	1	—	1	—	1	—	2	—	—	—	10	5	33·3
Resection (c)	6	5	45·5	8	13	61·9	2	3	4	—	—	—	—	2	4	1	1	3	25	27	51·9
Other operation	1	2	—	1	4	—	—	1	—	1	—	—	2	1	8	1	1	1	13	11	—
E. *Post-operative course:*			(a)			(a)															(a)
Uninterrupted recovery	80	—	74·8	108	—	68·4	8	—	9	—	2	—	3	—	12	—	2	—	224	—	66·7
Attacks of colic	—	—	—	2	2	2·5	—	—	—	—	—	—	2	—	3	—	—	—	7	2	2·7
Paralytic obstruction	3	—	2·8	3	5	5·1	1	—	1	—	—	—	1	2	1	—	—	3	10	10	6·0
Mechanical obstruction	1	—	0·9	—	2	1·3	—	1	—	—	—	—	—	—	—	—	—	—	1	3	1·2
Peritonitis	2	—	1·9	1	2	1·9	—	—	1	—	—	—	—	—	—	—	—	—	4	2	1·8
Secondary operation	3	—	2·8	—	3	1·9	—	1	—	—	—	—	—	—	—	—	—	—	3	4	2·1
No remarks	7	12	—	10	25	—	—	4	1	4	—	2	1	1	2	2	—	2	21	52	—
F. *Cause of death:*			(b)			(b)															(b)
Intestinal obstruction	—	6	50·0	—	20	58·9	—	3	—	2	—	1	—	1	—	2	—	2	—	37	54·4
Heart disease	—	2	16·7	—	2	5·9	—	2	—	—	—	1	—	—	—	—	—	1	—	8	11·8
Other circulatory disease	—	2	16·7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	3·0
Diseases of respiratory system	—	1	8·3	—	6	17·6	—	—	—	1	—	—	—	1	—	—	—	—	—	9	13·2
Peritonitis	—	—	—	—	3	8·8	—	1	—	—	—	—	—	—	—	—	—	2	—	6	8·8
Shock	—	1	8·3	—	2	5·9	—	—	—	—	—	—	—	—	—	—	—	—	—	3	4·4
Other causes	—	—	—	—	1	2·9	—	—	—	1	—	—	—	1	—	—	—	—	—	3	4·4

(a) The percentages in the "died" column are those who experienced the conditions before death. Non-intestinal conditions (e.g., pneumonia) have been omitted. Percentages are based on total cases, thus giving rates of incidence. They add up to more than 100, since some cases had more than one condition.

(b) Percentage of deaths within the type of hernia considered.

(c) Includes resection with lateral anastomosis, end-to-end anastomosis, etc.

Rec. = Recovered. D. = Died. M. = Mortality.

TABLE II

Duration of Strangulation at Time of Operation (Hours)	Operative Procedure									
	Replacement Only		Oversew Doubtful Area		Oversew Constriction Ring		Resection†		Other Operations‡	
	No.	%*	No.	%	No.	%	No.	%	No.	%
0– 6	36	92·3	2	5·1	—	—	2	5·1	1	2·6
6–12	57	90·5	4	6·3	—	—	3	4·8	1	1·6
12–24	42	87·5	1	2·1	1	2·1	6	12·5	2	4·2
24–48	46	69·7	8	12·1	3	4·5	12	18·2	3	4·5
Over 48	44	46·8	8	8·5	7	7·4	29	30·9	11	11·7
Not stated ..	17	65·4	2	7·7	4	15·4	—	—	6	23·1
Total ..	242	71·6	25	7·4	15	4·4	52	15·4	24	7·1

* Percentages are based on total cases within each duration. They add to more than 100 because some cases had more than one operation.
† Includes resection with lateral anastomosis, end-to-end anastomosis, etc.
‡ Includes untwist volvulus, divide band, free adhesions, etc.

TABLE III

Duration of Strangulation at Time of Operation (Hours)	Operative Procedure								
	Replacement, etc.*			Oversew†			Resection‡		
	Cases§	Dths.	Mort. %	Cases§	Dths.	Mort. %	Cases§	Dths.	Mort. %
0– 6 ..	35	3	8·6	2	—	—	2	—	—
6–12 ..	56	4	7·1	4	—	—	3	1	33·3
12–24 ..	39	4	10·3	2	1	50·0	6	2	33·3
24–48 ..	46	4	8·7	8	1	12·5	12	5	41·7
Over 48 ..	45	11	24·4	15	6	40·0	29	19	65·5

* Includes replacement, divide band, untwist volvulus, etc.
† Includes oversew doubtful area and oversew constriction ring.
‡ Includes resection with lateral anastomosis, end-to-end anastomosis, etc.
§ In which duration of strangulation was stated.

APPENDIX II

Statistical Notes

(a) Length of Bowel Strangulated (Replacement, etc., Cases Only)*

Length of Bowel Strangulated	Cases†	Deaths	Mortality (%)
1– 3 cm.	20	2	10·0
3– 5 „	34	4	11·8
5– 7 „	47	7	14·9
7– 10 „	26	—	—
10– 15 „	35	2	5·7
15– 25 „	34	5	14·7
25– 35 „	14	1	7·1
35– 50 „	6	2	33·3
50–100 „	6	3	50·0
Over 100 cm.	1	1	100·0
Total	223	27	12·1

* Includes replacement, untwist volvulus, divide band, etc.
† In which length of bowel strangulated was stated.

None of the above differences in mortality is statistically significant individually. On grouping, however, the following comparison can be made :

Length of Bowel Strangulated	Cases	Deaths	Mortality (%)
Under 15 cm.	162	15	9·3
Over 15 „	61	12	19·7

This difference is statistically significant ($\chi^2 = 4{\cdot}50$; $P = 0{\cdot}034$).

(b) Duration of Strangulation

Duration (Hours)	Type of Hernia			
	Inguinal		Femoral	
	No.	%	No.	%
0– 6 ..	20	19·4	15	10·3
6–12 ..	27	26·2	28	19·2
12–24 ..	14	13·6	24	16·6
24–48 ..	25	24·3	28	19·3
Over 48 ..	17	16·5	51	35·2
Total ..	103	100·0	146	100·0

Of strangulated inguinal herniae 59.2% came to operation within 24 hours, as compared with 46.1% of strangulated femoral herniae. This difference is statistically significant ($\chi^2 = 4{\cdot}30$; $P = 0{\cdot}038$).

(c) Age of Patient

Type of Hernia	Mean Age	Standard Error
Inguinal	63·8 years	1·3
Femoral	63·2 „	1·0

The difference is clearly not statistically significant.

(d) Pain in Sac

Type of Hernia	Cases with Pain Recorded	Cases with Duration of Pain less than 48 Hours at Time of Operation	
		No.	%
Inguinal ..	71	57	80·3
Femoral ..	100	68	68·0

This difference is hardly statistically significant ($\chi^2 = 3{\cdot}19$; $P = 0{\cdot}074$) but does suggest that the duration of pain is strongly correlated with the duration of strangulation, and this is consistent with the hypothesis that the more insistent pain in inguinal cases is a factor in bringing them to operation earlier than the femoral cases.

(e) Duration of Vomiting

Much the same argument applies to the experience of onset of vomiting. The coefficient of correlation between duration of strangulation and duration of vomiting is +0.95 for both inguinal and femoral herniae. Alternatively we may approach the problem in this way: if vomiting occurs earlier after strangulation in inguinal herniae then we should expect to find fewer long-duration strangulations associated with short-duration vomiting. This is true, as the following figures show.

Type of Hernia	Cases*	Cases with Strangulation longer than 24 Hours but Duration of Vomiting less than 24 Hours	
		No.	%
Inguinal	73	6	8·2
Femoral	117	14	12·0

* In which both durations were recorded.

This difference is not by itself statistically significant ($\chi^2 = 0{\cdot}67$; $P = 0{\cdot}41$), but in view of the alternative evidence of correlation might be accepted.

(f) Case Mortality and Duration of Strangulation

It will be clear from Section B of Table I that there is a progressive rise in mortality as the duration of strangulation increases. The slight reduction after 24 hours (from 16.7 to 15.2) is probably only a sampling irregularity and is not statistically significant.

With regard to Table III, owing to the reduction in the number of cases involved in the classifications of this table the differences in mortality reach statistical significance only when a broad comparison is made between strangulation of less than 48 hours and strangulation of longer duration than 48 hours—viz. :

Duration of Strangulation (Hours)	Operative Procedure								
	Replacement, etc.*			Oversew†			Resection‡		
	Cases§	Dths.	Mort. %	Cases§	Dths.	Mort. %	Cases§	Dths.	Mort. %
Under 48 ..	176	15	8·5	16	2	12·5	23	8	34·8
Over 48 ..	45	11	24·4	15	6	40·0	29	19	65·5

* Includes replacement, untwist volvulus, divide band, etc.
† Includes oversew doubtful area and oversew constriction ring.
‡ Includes resection with lateral anastomosis, end-to-end anastomosis, etc.
§ In which duration of strangulation was stated.

The increase in mortality with longer duration of strangulation is significant for both replacements ($\chi^2 = 8{\cdot}76$; $P = 0{\cdot}003$) and for resections ($\chi^2 = 4{\cdot}85$; $P = 0{\cdot}028$). The difference in mortality for the small number of oversew cases is not by itself statistically significant, the exact probability being 0.09.

(g) Gangrene and Perforation in Femoral Herniae

Type of Hernia	Cases*	Gangrenous and/or Perforated Bowel Wall	
		No.	%
Inguinal	106	13	12·2
Femoral	150	24	16·0

*In which the state of the bowel wall was recorded.

This difference is not quite large enough to be statistically significant ($\chi^2=0.70$; $P=0.40$).

The higher incidence of Richter herniae in femoral hernia recorded in the text of the report (22.8% against 10.1% in inguinal hernia, a difference of 12.7 ± 4.6) is statistically significant.

EOSINOPENIA CAUSED BY ADRENALINE INFUSION AND BY INSULIN HYPOGLYCAEMIA

BY

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Insulin hypoglycaemia was found to have a beneficial effect in the treatment of all except one of a series of cases of allergic bronchial asthma (Godlowski, 1946). The cases which responded were characterized by a fall in the eosinophil count of the blood, whereas no such fall was observed in the remaining cases with early recurrence of symptoms. The return of the blood eosinophils to normal in these responding cases took place in an oscillating fashion. Such an oscillatory return of the blood eosinophils has also been observed by Spangler (1925) during non-specific desensitization of bronchial asthma cases.

The blood eosinophils in the present allergic cases were observed to vary considerably in the same subject during the 24 hours in which hypoglycaemia was induced, and regularly to such an extent as to exclude any error in calculation. The significance of this phenomenon is made clear by two sets of observations. First, Bertelli *et al.* (1910) produced a considerable eosinopenia in dogs by hypodermic or intravenous injections of adrenaline. Secondly, Cannon *et al.* (1924) experimentally, and Heilbrun and Libert (1939) clinically, found that insulin hypoglycaemia is characterized by a liberation of adrenaline in an amount sufficient to meet the emergency of the rapidly falling blood sugar. These observations suggest that the eosinopenia occurring during insulin hypoglycaemia is due to an outpouring of adrenaline. Such a theory was accordingly put to the test by studying 11 allergic and eosinophilic subjects (9 bronchial asthma, 1 urticaria, and 1 dermatitis) along the following lines.

Method

The preliminary examinations of the allergic cases consisted in *x*-ray examination of the chest and sinuses, exploration of the upper part of the respiratory tract, urine analysis, investigation of the sputum for eosinophilia and of stools for parasitic infestation and eosinophils, a test meal, the B.S.R., and white cell and differential counts.

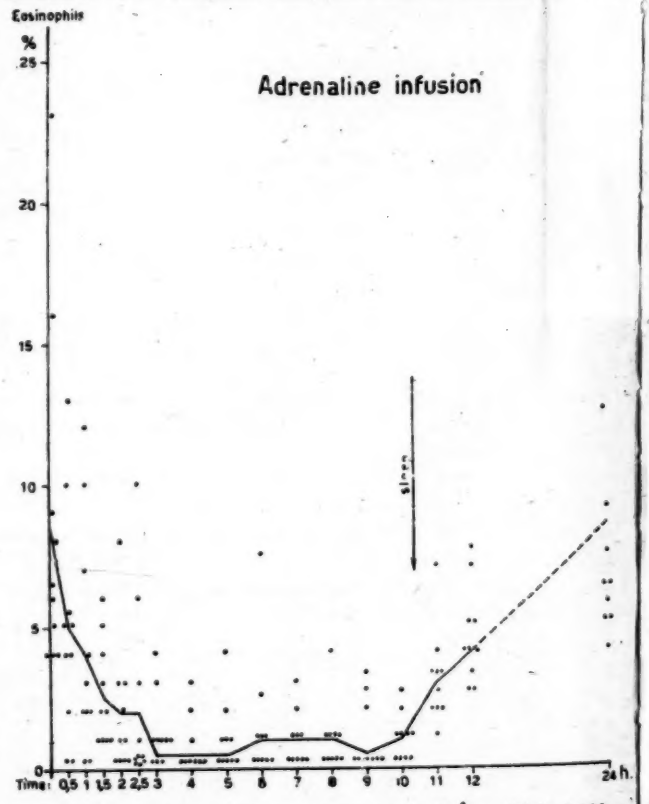
The non-fasting blood eosinophils were estimated before starting the *adrenaline infusion*. The infusion consisted in the intravenous administration of 8 to 10 ml. of 0.1% adrenaline solution (i.e., 8 to 10 mg. of adrenaline) dissolved in 200 to 300 ml. of normal saline at the rate of 6 to 12 drops a minute over a period of 8 to 12 hours. Severe palpitation, headache, or other toxic symptoms of hyperadrenalinaemia were relieved by slowing or stopping the drip for a short time and then gradually increasing up to the limit of tolerance. The blood pressure rose in the first hour and then fell slowly almost to its initial level during the second hour of the drip. A few minutes after the drip started a feeling of relief resulted in severe cases. The eosinophils were estimated half-hourly during the first three hours (by the method used during insulin hypoglycaemia), then hourly until the patient fell asleep; the eosinophil count during the next two hours was taken twice by squeezing the already pricked finger without wakening him.

Two or three days later the *insulin test* was made (after 12 hours' fast) by injecting 100 units of soluble insulin subcutaneously, and the same examinations were carried out as during the adrenaline infusion. The patients were not kept in a state of hypoglycaemia longer than three hours, and hypoglycaemia was stopped by oral or intravenous introduction of glucose (Godlowski, 1946). Counting of the eosinophils and other white cells was done according to the method described by Randolph (1944) or by estimating the differential count of a blood film stained by the May–Grünwald–Giemsa technique.

The first six cases of bronchial asthma and one case of allergic dermatitis were subjected to sternal puncture before and during the eighth hour of adrenaline drip and insulin hypoglycaemia, and the bone marrow obtained thereby was examined for eosinophils in the same way as the peripheral blood.

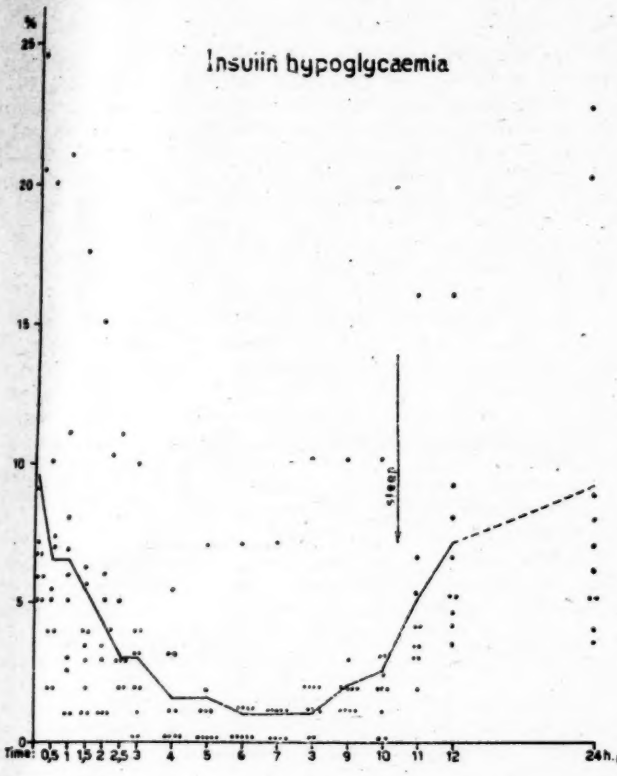
Results and Discussion

All the cases examined during adrenaline infusion (curve 1) showed a marked eosinopenia amounting in most instances to a complete disappearance of eosinophils from the blood. Such a disappearance took place within half an hour in two cases, whereas the remainder required a period of several hours to reach the zero level or near it. The lowest level was in the more prolonged cases reached during the fourth hour of adrenaline infusion and oscillated around this for the next six hours. Thereafter the curve of mean values, although the adrenaline infusion was



discontinued, remained at the same level, and in the first hour of sleep climbed steeply, but not to its initial level. The pre-experimental value was attained next morning—that is, 24 hours after the start of adrenaline infusion.

Insulin hypoglycaemia (curve 2) was also accompanied by a disappearance of eosinophils from the peripheral blood. This diminution of cells, however, differed from the



eosinopenia of the adrenaline drip in that it began a little later, took place more slowly and steadily, and did not last so long. The curve of mean values then slowly climbed and became very steep in the first two hours of sleep before reaching its initial level next morning.

The quantitative and qualitative similarity of eosinopenia in adrenaline infusion and in insulin hypoglycaemia suggests a common cause for both, particularly in view of the proved fact of adrenaline production in insulin hypoglycaemia both in laboratory (Cannon *et al.*, 1924) and in clinical experiments (Heilbrun and Libert, 1939).

The sternal bone-marrow eosinophilia in seven cases at the time of lowest peripheral eosinophilia remained at its initial level during both adrenaline infusion and insulin hypoglycaemia. The conclusions from this are (*a*) that adrenaline in both cases did not exercise its depressive action on bone-marrow eosinophilia, and (*b*) that bone marrow cannot be the site where eosinophils accumulate during adrenaline infusion and insulin hypoglycaemia.

The question of eosinopenia during adrenaline infusion and insulin hypoglycaemia necessitates a consideration of the following problems: (1) the mode of adrenaline action in the eosinopenia due to exogenous and endogenous hyperadrenalinaemia; (2) the site of eosinophilic retention during that time; and (3) the relation between artificial eosinopenia and sleep.

(1) Adrenaline injected intravenously performs its action almost immediately by stimulating the sympathetic nervous system; but this action is very quickly exhausted, since adrenaline itself is rapidly metabolized by the tissues. The effect of sympathetic stimulation, however, might persist for a prolonged period, as, for example, neutrocytosis (Naegeli, 1931). One of these prolonged sympathetic effects might be eosinopenia, whereas eosinophilia belongs to the so-called vagal symptoms (Eppinger and Hess, 1909a, 1909b). The mechanism of this action of adrenaline cannot itself be explained on the ground of the results of the present observations.

(2) The values obtained for bone-marrow eosinophilia definitely exclude the retention there of both young and mature eosinophils. Bertelli *et al.* (1910) showed that eosinophilia due to intravenous or subcutaneous injection of 5 mg. of adrenaline into a dog produced in three and a half hours a fall in eosinophils from 6.9% with a total white blood count of 12,050 to 3.5% with a total of 20,050, the other white cells being more or less in the same proportion as before injection. A histological search for local eosinophilia after death showed that the liver was the only organ with an abnormally high value for eosinophils. Those authors therefore believe that liver tissue absorbs the surplus adrenaline, and by destroying it rapidly liberates itself from its eosinopenic action, while the eosinopenic influence is still evident in the other organs.

(3) Sleep is accompanied by symptoms of vagal preponderance, and the eosinopenia resulting from transitory artificial sympathetic overactivity accordingly loses its causative stimulus. The return to initial "vagal blood," however, needs a longer vagal action of sleep than two hours.

Continuation of endogenous hyperadrenalinaemia produced by repeated insulin hypoglycaemia might in a certain number of allergic cases result in a more permanent depression of the high eosinophilic count, and this in turn could be regarded as an indication of a return towards the normal. Clinical improvement of bronchial asthma and other allergic conditions (Godlowski, 1946) following the application of insulin hypoglycaemia and accompanied by diminishing eosinophilic count might be due to the increased production of endogenous adrenaline. The eosinopenia occurring during preliminary insulin test, on the other hand, may be regarded as a proof of an ability of the organism to respond by transitory adrenalinaemia. This might be taken as suggesting that the organism is likely to respond to such a treatment.

Summary

A study is made of 11 allergic and eosinophilic subjects to test the suggestion that the eosinopenia occurring during insulin hypoglycaema is due to the outpouring of adrenaline.

It was found that peripheral blood eosinophilia decreases markedly and to the same extent during prolonged intravenous adrenaline infusion as during insulin hypoglycaemia.

Sternal Bone-marrow Eosinophilia in Adrenaline Infusion and Insulin Hypoglycaemia

No.	Before Treatment				During 8th Hour of Adrenaline Infusion				During 8th Hour of Insulin Hypoglycaemia			
	Young Forms %	Mature Forms %	Total %	Periph. Eo-philia %	Young Forms %	Mature Forms %	Total %	Periph. Eo-philia %	Young Forms %	Mature Forms %	Total %	Periph. Eo-philia %
1	3	2	5	8·5	1·6	6	7·6	0	2·6	5·6	8·2	0
2	7·5	5	12·5	6	2	2·3	4·3	2	2·2	4	6·2	1
3*	8·5	19	27·5	44	9·2	23	32·2	20	11·3	27	38·3	45
4	2·5	6	8·5	7	3	4·5	7·5	0	2·3	5·3	7·6	1
5	4·3	6·3	10·6	6	2·3	5·1	7·4	0	3	3	6	2
6	3·5	6	9·5	9	2·1	5	7·1	1	1·5	2	3·5	1
7	2	7	9	7	4·5	7	11·5	0	3·6	5	8·6	1
	Average:		11·8	12·5			11·0	3·3			11·2	7·3

* A case of allergic dermatitis not included in cases described in text.

The quantitative and qualitative similarity of this phenomenon in both conditions suggests a common cause for the eosinopenia.

Adrenaline does not affect the eosinophilic content of bone marrow, and the latter accordingly is not the site of eosinophilic retention.

Eosinopenia due to sufficiently high insulin dosage indicates an ability of the organism to meet the emergency of hypoglycaemia by secreting adrenaline, and this, if repeated several times, might explain the improvement reported as being effected in allergic conditions through treatment with insulin hypoglycaemia.

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THE CONVULSIVE PROPERTIES OF THIOPENTONE

BY

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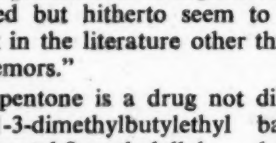
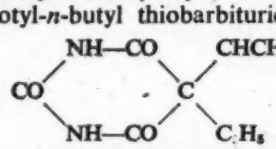
The case of frank convulsions under thiopentone anaesthesia recorded by Bodman and Farr (1947) is of interest inasmuch as such phenomena in slighter form must have been widely observed but hitherto seem to have excited little or no remark in the literature other than an occasional reference to "tremors."

Thiopentone is a drug not distantly related to others—e.g., 1-3-dimethylbutylethyl barbituric acid, and 2-1-methylcrotyl-2-methylallyl-, 1-methylbutyl-2-methylallyl-, and crotyl-*n*-butyl thiobarbituric acids—which have been



1-3-Dimethylbutylethyl barbituric acid—a convulsant.



Thiopentone soluble: sodium 1-methylbutylethyl thiobarbiturate.

described by Swanson and Fry (cited by Adams, 1944) as convulsants having no sedative properties.

The "tremors," or minor convulsive manifestations, of thiopentone occur shortly after consciousness is lost, and consist of: (1) Pronatory spasm of the arm, either spontaneous or readily elicited by pricking, or even simply by withdrawal of the syringe needle. (2) This in some cases progresses to strong clonic contractions of the pectoral and neighbouring muscles, a sign which might perhaps be descriptively named the "shudder reflex." (3) Other muscles, especially those of the glottis and diaphragm, may be involved. The phenomena are in all cases most strongly grouped round the musculature associated with respiration, normal or forced. (4) In some cases the spasm is of tonic rather than clonic nature. These are harder to recognize, since the predominant sign is a cessation of respiration, which more often occurs as indicating a *relaxation* of the musculature consequent on a momentary overdose. The spastic type of respiratory arrest may, however, be differentiated by its occurrence after a relatively small dose and almost invariably in the muscular type of patient, by observation of the rigidly held chest, and by the fact that it often disappears on rapidly administering a further small dose of the drug (though it is not recommended that this last feature be adopted as a routine test).

The following case is cited in illustration.

Case Report

A healthy gunner aged 33 was presented for anaesthesia following a fracture of both bones of the left leg, the date being Oct. 11. After "omnopon"-scopolamine he was given 1 g. of thiopentone intravenously, combined with gas-oxygen, for skeletal traction by a pin through the os calcis, and plaster. No untoward symptoms were noted. On Oct. 29 he was anaesthetized for replastering, again receiving omnopon-scopolamine and 1 g. of thiopentone. This time no inhalation was given, and a further injection of 0.5 g. of thiopentone was found necessary; otherwise there were no unusual features.

On Nov. 2 further manipulation was required and he was once more anaesthetized, on this occasion for some reason without any premedication. He was given 1.5 g. of thiopentone, and definite convulsive phenomena at once developed. Pronatory movements were followed by the "shudder reflex" described above, and this by convulsive inspiratory movements of the respiratory musculature. Respiration became shallow and rapid, the movements being about 60 a minute, and thus frequent enough to ensure adequate oxygenation. During the next five minutes the signs died away, and the patient thereafter progressed without further unusual signs.

On Nov. 5 another anaesthetic was required, and this time, being forewarned, he was given omnopon-scopolamine, and 0.5 g. of thiopentone was injected to see what the response would be. As soon as he became unconscious the same strong convulsive movements were once more observed, and no time was lost in administering gas-oxygen with ether. The administration was rendered difficult by laryngeal spasm, and not until a tracheal tube was passed was the anaesthesia free from difficulty. The patient thereafter progressed normally, and was not seen again.

Comment

This case illustrates other features associated with these properties of thiopentone: (1) The untoward signs were not at first elicited, but developed and got worse after several administrations of the drug during a comparatively short period, presumably indicating a progressive intolerance which might possibly be seen in other cases were their apparent tolerance subjected to the same test. (2) Though premedication was not in itself sufficient to prevent the signs, its absence on one occasion was associated with their appearance in fully developed form. (3) The condition was readily controlled by combination with other anaesthetic agents. (4) The condition each time occurred so early that it must be regarded as produced by the direct effect of the drug on the nervous system, and not by ketosis, carbon dioxide excess, or any of the other metabolic factors which have in the past been suspected as causative in other forms of convulsions.

My records contain several cases in which so similar a procession of events occurred that it seems needless to recount them in detail. Army experience taught me to regard the occurrence of any degree of spastic pronation during administration as a warning that the subject was unsuitable for uncombined thiopentone anaesthesia, and to add gas-oxygen inhalation in 25% mixture at the earliest opportunity. I always found that two to five minutes of this would ablate all convulsive phenomena and produce an even anaesthesia which could be managed by ordinary methods. Laryngeal spasm and the "total" respiratory spasm described above can usually be ablated by a further dose of thiopentone, but the "shudder reflex" is never thus amenable without the addition of other agents.

Cystoscopy or the passage of bougies under uncombined thiopentone anaesthesia has in my experience often produced difficulties resolved by the addition of gas–oxygen, and the inference seems to be that the sphincters may also be involved in a spastic process during such anaesthesia, which in these cases is also best combined with inhalation agents.

It is curious that these by no means rare signs should occur with a drug often used to combat convulsions; and in this connexion the hypothesis of Williams and Sweet (1944) seems to be pertinent. In considering anaesthetic convulsions in general, they adduce the probability of a constitutional factor, and suggest that in every case a convulsion is "primarily due to an inborn but latent epileptic liability . . . factors which arise during anaesthesia being merely precipitants of the convulsions." Encephalograms of patients known to have had convulsions during anaesthesia show irregularities supporting this hypothesis. Given the existence of such a type of patient, it should not be too much to suppose that the sudden addition of any potent drug to the blood stream might well act as a "precipitant."

Summary

The convulsant possibilities of thiopentone might be suspected, having regard to its near relationship to other strongly convulsant drugs.

The most common phenomena associated with these properties of the drug are: (*a*) pronatory movements of the arm, sometimes progressing to (*b*) strong shuddering movements, and even to (*c*) clonic spasm of other muscles, mostly those associated with respiration, either normal or forced. Tonic spasm of the glottis or of the entire thoracic musculature is not uncommon, and the sphincters also sometimes seem to be involved in the process.

The time factor suggests that no other exciting agent than the drug itself is responsible for their occurrence; but there is a possibility that an inborn convulsive tendency in the patient may predispose to their appearance.

The onset of convulsive phenomena is favoured by absence of premedication, uncombined thiopentone anaesthesia, and repeated thiopentone anaesthesia.

Convulsive signs are most likely to occur in muscular highly trained males leading an open-air life.

They are easily prevented or ablated by omnopon–scopolamine premedication and early addition of gas–oxygen in 25% or other suitable mixture.

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GRANULOSA-CELL TUMOUR OF OVARY AS ACUTE ABDOMINAL EMERGENCY

BY

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Granulosa-cell tumours of the ovary are usually recognized as a result of their effect on the endometrium, but like other ovarian neoplasms they may give rise to acute surgical complications.

Case Report

A female patient aged 48 years was admitted to hospital complaining of acute abdominal pain of some twelve hours' duration. She had had no previous illnesses. For the last three months she said she had "not been feeling too well," and for the last twelve days she had had a diffuse lower-abdominal pain of a moderately severe nature. There had been no definite colic. During the past five days the pain had become localized in the right iliac fossa and had become more constant; it radiated into both loins. Lying in bed gave some relief. There had been no nausea and no vomiting. The bowels were regular and micturition normal. The menopause had occurred at the age of 44, and since that date the patient had had no vaginal bleeding. She had two children aged 18 and 12 years, and there had been one miscarriage thirteen months before the birth of her eldest child.

On examination the tongue was moist and had a white fur. The abdomen moved freely on respiration. Tenderness and muscle-guarding were present in the right iliac fossa. Vaginal examination revealed tenderness in both fornices, more marked on the right side. Pain was complained of on moving the cervix. The uterus was slightly increased in size. The condition was diagnosed as subacute appendicitis and operation advised.

A split-muscle incision was made. On opening the peritoneal cavity a considerable quantity of blood was evacuated. The exposure was considered to be unsatisfactory, so a further midline incision was made. About 1 pint (568 ml.) of blood and clot was evacuated from the pelvis. An ovarian neoplasm of moderate size was delivered, with blood clot extruding from two places in its capsule. Salpingo-oophorectomy was performed. The uterus and left ovary appeared to be normal. The patient had an uneventful convalescence.

Comment

The specimen consisted of a tumour measuring 9 × 7 × 5 cm. and having a thick whitish capsule, which in places showed a yellowish colour owing to the tissue deep to it. It had ruptured at two points, and blood clot was protruding from these ruptures.

A portion of Fallopian tube was adherent to the tumour at one point. The cut surface showed a uniform whiteness, but with areas of haemorrhage. On section a dense fibrous capsule resembling ovarian stroma was seen. No follicular elements were present, the tumour consisting of sheets of oval cells lying in a loose stroma rich in blood vessels. In places the cells had an acinar arrangement, but nowhere was there follicular formation. In a few areas there were vacuolated cells resembling Call–Exner bodies. There was a considerable degree of necrosis and interstitial haemorrhage. The appearances were those of a granulosa-cell tumour of the diffuse type.

The granulosa-cell tumour is one of the solid gonadal tumours of the ovary in which the cell elements resemble the granulosa cells of the normal Graafian follicle and has the ability to secrete an oestrogenic hormone. The tumours are almost invariably unilateral, maintain the shape of the ovary within a firm fibrous capsule, and vary in weight from a few grammes to several kilograms. The cut surface is a soft whitish pink with yellow zones, sometimes partly cystic, and occasionally there are areas of haemorrhage. Histologically three main types are recognized according to the degree of glandular-tissue differentiation—follicular, trabecular, and diffuse—and as a general rule the least differentiated tumours show the least hormonal activity. In those tumours with oestrogenic properties the uterine endometrium is of the hyperplastic, non-secretory type with cystic dilatation of the gland tubules. Tumours showing evidence of malignancy are extremely rare. The pathology has been well summarized by Harvey, Dawson, and Innes (1939).

Although haemorrhage into a granulosa-cell tumour of the ovary is common, I cannot find any previous report of a case associated with so severe a degree of haemoperitoneum. The fact that the haemorrhage had been severe enough to burst through a capsule so thick as the one in this case shows the severity of the bleeding. There was no evidence of torsion, a complication that has been reported.

Reference

Harvey, W. F., Dawson, E. K., and Innes, J. R. M. (1939). *Edinb. med. J.*, **46**, 256.

Medical Memoranda

Primary Carcinoma of the External Auditory Meatus

Primary carcinoma of the external auditory meatus is usually considered a rare disease. It is probably not so rare as is generally thought, but can be diagnosed only by biopsy. The early symptoms are aural discomfort, intense and continuous earache, and aural discharge. Local extension is rapid and glandular metastasis rare. Treatment in the early stage is by excision with the diathermy knife, combined in the later stage with radium beam therapy.

ILLUSTRATIVE CASES

Case 1.—Madame Le S., aged 46, was first seen on May 23, 1944, complaining of rapidly increasing deafness in the right ear, together with a slight purulent aural discharge and mild intermittent pain. Her symptoms were of only one month's duration. There was no history of otitis media. Examination revealed a small papillomatous mass deep in the meatus on the postero-superior wall and hiding the drum. The rest of the meatus was the seat of a chronic eczema. A slight fetid purulent discharge was noted. There was a slight diminution in hearing (transmission deafness). Vestibular apparatus was normal. Radiography was negative. A first biopsy gave a doubtful result, but a second, a fortnight later, revealed the presence of a squamous-celled epithelioma. A radical mastoidectomy was performed at the end of June, the whole of the skin of the posterior wall of the meatus being removed. Some inflammatory granulations were found in the middle ear but no neoplastic tissue. A radium needle was applied to the meatus on July 20, being left in position for five days. The patient was discharged on Aug. 12, 1944. The wound healed slowly by granulation. A small papillomatous lesion appeared on the anterior wall of the meatus in January, 1945, and a wide resection of the area was performed with a diathermy knife on Jan. 25. Histologically, the lesion was a squamous-celled epithelioma. In November, 1945, re-examination revealed no recurrence. Epithelization of the operation cavity was practically complete, but there was some radionecrosis of the tympanic bone, with the presence of a sequestrum (17 months after the radium application).

Case 2.—Madame C., aged 57, was admitted on Feb. 21, 1945, with a history that her left auditory meatus had become blocked by a white hard mass, which was removed by an otologist. She then developed meatal furuncles with intense pain in the ear. This pain had continued unremittingly until her admission. She had been examined as an out-patient in November, 1944, when a small ulcer of the meatus was seen. A fortnight later a sinus in the antero-superior wall was noted, from which pus exuded. Radiography was negative, as was the Wassermann reaction. In spite of local treatment no improvement took place in the symptoms, and some granulations appeared. A biopsy in February showed no signs of neoplasm, and local treatment with silver nitrate was continued. The patient was discharged on March 14, but suppuration and pain continued, and on June 13 a second biopsy revealed a squamous-celled epithelioma. The patient was readmitted on July 3, and a radical mastoidectomy was performed on the 6th. At operation the area of involvement was found to be much more extensive than otoscopy had suggested. The middle ear was filled by a neoplastic mass, and at the level of the roof of the attic the dura was laid bare and covered with very suspicious granulations. A few days later a course of 17 exposures to *x* rays was begun. A facial palsy appeared on the day after operation, but the pain had already disappeared. The patient still has some secretion from the operation cavity, but pain has not returned and the general condition is satisfactory.

Case 3.—Madame D., aged 49, was admitted for radical mastoidectomy on April 4, 1944. She had suffered from left aural discharge since childhood, without acute symptoms and without vertigo. Hearing on the left side had gradually diminished. She had recently noticed a vague discomfort in the ear. In February, 1944, a doctor had curetted some polyps in her left meatus. On examination she was found to have a left facial palsy and a meatus full of polyps. At operation on April 5, 1944, three large sequestra were removed from the antrum, laying bare the dura. There was osteitis of the wall of the facial canal, and a fungoid mass in the middle ear which could not be removed entirely. The patient was discharged on April 20. On May 15 she was admitted to the Hôpital Claude Bernard for erysipelas. She was transferred to the Hôpital Saint-Antoine on June 13, after having had a large abscess of a cervical gland. Her mastoid cavity was discharging freely, and her temperature was 103.3° F. (39.6° C.). Towards the end of June, after sulphonamide and vaccine therapy, her neck condition settled down and her temperature became normal, although the aural discharge persisted. After a flare-up of pyrexia on July 4, a biopsy of granulations in the meatus was performed and revealed a basal-celled epithelioma of the meatus. In spite of the introduction of radium needles and a subsequent course of *x*-ray therapy the patient had a relapse in March, 1945, with large, painful, fluctuant cervical and submaxillary glands and pyrexia, and she died of exhaustion on April 2, 1945.

PAUL DUBS, M.D.,
From the E.N.T. Department, Hôpital Saint-Antoine, Paris.

A Case of Reversible Papilloedema due to Heart Failure

The following case is sufficiently unusual to make it worthy of record.

CASE REPORT

On Feb. 11, 1947, a man aged 61 was admitted to the Middlesex Hospital under our care with a diagnosis of coal-gas poisoning of two days' duration.

Examination revealed some justification for this view, as he was in a stuporous condition, extremely dyspnoeic, and very cyanosed, the hands and face being a deep blue-plum colour. The blood pressure was 145/95 mm. Hg. Further examination showed that he had marked venous engorgement, a palpable liver, and rales at the base of both lungs. Spectroscopic examination of his blood for abnormal absorption bands was negative. The haemoglobin was 116% and red cells numbered 5,800,000 per c.mm. It was therefore thought that this was a case of left- and right-sided heart failure, probably secondary to long-standing emphysema, bronchitis, and asthma, confirmation of the latter diagnoses being found in a previous history case-sheet giving details of treatment. The blood Wassermann reaction was negative. *X*-ray examination of the chest suggested that there was some pulmonary arteriosclerosis, the report being as follows: "Bronchitic and emphysematous changes. Prominence of the pulmonary artery, and in the lateral film it appears as dense as the aorta." The electrocardiogram showed right axis deviation.

Dr. D. Evan Bedford reported: "This patient has pulmonary hypertension with dilatation of the pulmonary artery and its branches, but no dilatation of the right ventricle visible by radioscopy, though there is probably some hypertrophy. There is no evidence in the film of fibrosis of lung. I should regard this as a case of emphysema in which the dyspnoea and cyanosis are mainly pulmonary in origin, not cardiac."

On routine examination of his eyes by one of us (J. B. H.) he was found to have pronounced papilloedema of both disks, the engorged veins being buried at their point of entry into the oedematous disk margin. Mr. A. V. Cooper Stevens confirmed these findings.

The patient was treated by venesection, "cardophylin," and digitalis, and in seven days all signs of heart failure, with the exception of some residual cyanosis of the extremities of the ears and fingers, had disappeared. The papilloedema gradually cleared, and when Mr. A. J. B. Goldsmith examined the fundi on Feb. 18 he reported: "Lens and vitreous clear, right and left. Both fundi show normal disks. The veins are markedly dilated and there is a little arteriosclerosis. There is no papilloedema."

The patient was discharged when better, the blood pressure having now fallen to 100/75 mm. Hg, but he unfortunately relapsed two months later and died in a further attack of cardiac failure in which the bilateral papilloedema was again present. No post-mortem examination was obtained.

Fishberg (1946) states that retinal haemorrhages and papilloedema may occur in right-sided failure due to pulmonary endarteritis. He records that "in one case an excellent response of the symptoms of right ventricular failure to digitalization was accompanied by complete clearing-up of the retinal haemorrhages and papilledema." The papilloedema is probably due to increased pressure in the venous cranial sinuses interfering with the filtration processes of the arachnoid villi, thus causing a rise in the pressure of the cerebrospinal fluid.

G. E. BEAUMONT, D.M., F.R.C.P.,
Physician to the Middlesex Hospital.
J. B. HEARN, M.B.,
Late House-physician to the Middlesex Hospital.

REFERENCE

Fishberg, A. M. (1946). *Heart Failure*, 2nd ed., p. 545. Kimpton, London.

During the past six years over 500 tons of rose hips have been gathered in Scotland and manufactured into rose-hip syrup. Collectors in 1947 broke all previous records by gathering 144 tons of rose hips as against 113 tons in 1946 and 70 tons in 1945. Credit for this result is due to the Women's Voluntary Services, the Scottish Women's Rural Institutes, and the members of youth organizations and similar bodies.

Reviews

ENCEPHALOGRAPHY

Further Studies in Encephalography. By E. Graeme Robertson, M.D., F.R.C.P., F.R.A.C.P. (Pp. 104; 53 illustrations. £2 2s.) Melbourne and London: Macmillan and Co. 1946.

The author describes methods of ensuring—as far as it is possible—that adequate air replacement may be brought about in all the important channels traversed by the cerebrospinal fluid. Excellent radiographs with explanatory diagrams illustrate the text, and he interprets the pictures well. The theories that he propounds to account for the physical processes occurring in these investigations are interesting though unconvincing—as are the ingenious experiments that are supposed to confirm them. He records some noteworthy data, hitherto disregarded, among the observations on cerebrospinal-fluid pressures. Perhaps it will not be considered out of place here to warn the prospective encephalographist that the manometric pressure in the lumbar theca does not always correspond with the intracranial pressure. The author might have mentioned this, as well as the fact that in some cases even absence of papilloedema does not prove that the intracranial pressure is not raised.

On p. 49 is the comment: "It is reasonable to assume that the maintenance of a constant pressure will diminish the risk of investigation when a tumour is present." How justifiable the performance of encephalography may be in a case of suspected tumour is a matter for serious consideration. But the statement on p. 48 that, "when a patient is confused or drowsy and a cerebral tumour is suspected, the employment of an initial sedative is contraindicated," is not applicable, for few, if any, neurosurgeons would sanction this procedure in any patient in such a clinically deteriorated state. The author's work in encephalography is well known, and the present monograph reveals the high standard characteristic of it. The book should be studied by all who intend to employ this method of visualizing changes within the brain and in the associated cerebrospinal-fluid pathways.

HARVEY JACKSON.

INTRODUCTION TO SYPHILOLOGY

Essentials of Syphilology. By Rudolph H. Kampmeier, M.D. With chapters by Alvin E. Keller, M.D., and J. Cyril Peterson, M.D. Second edition. (Pp. 465; 87 illustrations. 25s.) Oxford: Blackwell Scientific Publications. 1946.

The second edition of Dr. Kampmeier's book differs from the first only in the addition of a short chapter on the intensive treatment of syphilis. The first edition was dated 1944, and the second 1946, but it is clear that the latter was actually compiled in 1944, and the author therefore does not discuss the more modern methods of penicillin therapy, the use of BAL in the treatment of toxic effects, the results of recent investigations into the causation of so-called post-arsphenamine jaundice, and other matters. However, such omissions call for no carping criticism, for the treatment of syphilis, in its early stages at any rate, is changing so constantly that any textbook is out of date as soon as it is published. These remarks should detract very little from a book which is exactly what it is meant to be—a short, concise account of the essentials of syphilology, intended not for the expert but for the student and the practitioner.

This account of syphilis presents it as a protean disease. The author stresses the necessity of careful anamnesis and clinical examination, emphasizes the value of dark-ground examination as the best guide to diagnosis in the early stages, warns against regarding a positive serum reaction as diagnostic in itself, and seeks to arouse practitioners' suspicion of the role syphilis may play in chronic disease. Moreover, he rightly points out that the practitioner has a duty beyond that of merely treating his patient. Syphilis control is even more important to the community than treatment of the individual patient, and every infected person must have contracted it from some other infected person, who should be sought and treated. Almost every chapter starts with a historical note which adds interest for the reader, as do the many summarized case reports which help to conjure up a mental picture and so aid the memory. Most of the illustrations are excellent; the type is clear and the format above reproach. In addition to the clinical sections, there are chapters on the sociological and epidemiological aspects by two collaborators. Mistakes appear to be rare, but 1.2 g. of arsenoxide per pound of body weight (p. 441) would infallibly land the patient in the post-mortem room.

In spite of these criticisms we confidently recommend this book to the student.

T. E. OSMOND.

RECENT PSYCHO-ANALYSIS

The Yearbook of Psycho-analysis. Volume 2, 1946. Managing Editor, Sandor Lorand. (Pp. 280. 30s.) London: Imago Publishing Co. 1947.

The aim of this series of *Yearbooks*, as set forth by the publishers, is to keep readers acquainted with modern research in the theory and practice of psycho-analysis; but, to judge from the contents, the editors have on this occasion failed to attain that end. The papers collected here, although very readable and in some respects timely, contain little that is new; the volume might indeed have been more appropriately entitled a "Pot-pourri from a Psycho-analytical Garden."

The most useful and illuminating article for the general practitioner is from the pen of Otto Fenichel, whose recent untimely death was a severe blow to psycho-analysis. He classifies the various forms of psychosomatic disorder—a subject that has provoked interest in recent years but given rise to many misconceptions, particularly over treatment. Fenichel was concerned to correct these misconceptions. Helene Deutsch, who has made a close study of women's disorders, contributes a useful article on problems of conception. Kubie and Margolin give an interesting account of the therapeutic role of drugs in the process of repression, dissociation, and synthesis. Their view is that drugs facilitate the recovery of the repressed material and render the personality less vulnerable to disturbance by exposure to it. They do not, however, indicate the many drawbacks to the use of drugs as an adjuvant to psycho-analysis.

English writers are well represented by articles from Berg on punishment, Ernest Jones on war conditions, and Flugel on problems of war, peace, and morals. Edward Glover contributes an essay in psycho-analytical biography, the subject being the late David Eder. The reprint of an essay by Freud on "Dostoevsky and Parricide" adds greatly to the attractions of the book.

EDWARD GLOVER.

METAL IN BONE

Metallschädigung bei Osteosynthesen. By R. Nicole. (Pp. 74; illustrated. 8 francs.) Basle: Benno Schwabe and Co. 1947.

The clinical and experimental researches described in this monograph on metallic hazards in osteosynthesis have led the author to conclusions generally accepted by orthopaedic surgeons to-day. With modern metals, in particular with vitallium and tantalum, any metallosis or toxic effect on the tissues is negligible, but it is a mistake to conclude that no risks remain. If the open reduction and fixation of a fracture are done faultily, so that intermittent or constant bending and shearing strains continue to act across the fracture interval, these will at the same time cause delayed callus formation with poor ossification—even pseudarthrosis—in the bone, loosening of screws, and bending or breaking of the plate, nail, or other elements in the metallic agent used.

The author makes the attractive comparison between the yielding of a plate under such circumstances and the fatigue fracture of a long bone, and indeed the two are very similar apart from the healing reactions in the latter. He postulates that the changes at the sites of stress in the metal are due to "tension corrosion," which differs from ordinary corrosion in that it is precisely restricted to the zones of fatigue in plates and screws, and he cites convincing clinical evidence that this is the case. With his central thesis there must be general agreement. The chief problem in the treatment of fractures and in osteosynthesis (a term which, incidentally, might be more often used in English) is to ensure that the mechanical arrangement of the fragments and the fracture site are physiologically correct until union has occurred.

DAVID LE VAY.

GYNAECOLOGY

A Textbook of Gynaecology. By James Young, D.S.O., M.D., F.R.C.S.Ed., F.R.C.O.G. Seventh edition. (Pp. 471; 277 illustrations. 30s.) London: A. and C. Black. 1947.

It reflects great credit on Prof. Young that his textbook has been so widely read, and the seventh edition is admirable. The outstanding features are the superb photographs and photomicrographs—indeed, Fig. 119 is as good as any photograph of a wet specimen that we have seen published. The most striking characters of the book are simplicity of expression, clear classification, and sufficient reference to advanced work to whet the appetite of the intelligent student. The chapter on tuberculosis of the generative organs is exceptionally good.

We can criticize only details—for example, Figs. 31 to 35 are repeated as Figs. 96 to 100. The legends are not all satisfactory; Dierk's layer, though beautifully shown in an illustration, is not described. The author emphasizes Hamblen's work, yet his views have been severely criticized, and few workers claim such good results as he. Prof. Young might have said more about the use of androgens in gynaecological therapeutics. In describing the treatment of dysmenorrhoea he does not mention the use of stilboestrol to inhibit ovulation by giving the drug in the early part of the cycle—a method at least as good as giving oestrogens in the few days before menstruation starts. His account of the endocrines in relation to amenorrhoea is perhaps not adequate to modern needs, and he might have described more fully the adrenogenital syndrome, Cushing's syndrome, and panhypopituitarism. Prof. Young will be congratulated by all gynaecologists on this edition, and we can confidently recommend it to both students and general practitioners.

WILFRED SHAW.

HEALTH SERVICES

Municipal Health Services. By Norman Wilson, M.A., Dipl.P.A. (Pp. 178. 7s. 6d.) The New Town and County Hall Series. London: George Allen and Unwin, Ltd.

This small book of 178 pages is the third volume in "The New Town and County Hall Series." The author's aim is to discuss what are often called personal health services, and in Part I he describes the usual practice of local authorities with regard to maternity and child welfare, the health of the school child, tuberculosis and its treatment, the control of communicable diseases, the care of the mentally afflicted, general hospitals, poor law, and other services. A section of the book is devoted to "The Administrative Machinery," and he gives an account here of the powers and duties of the Ministries of Health and of Education and of the various types of local authorities.

Part III is entitled "A National Health Service" and is most disappointing. In the foreword the author states that the Government's proposals for a national health service had not been made public when the book was going through the press, but he quotes the Government's White Paper on the subject on p. 165, though giving no guidance to the new scheme. Although Part III begins with a section on "National Health Insurance" the author does not refer to the very important White Papers on social insurance (1944) or to the National Insurance Act, 1946, which make such radical changes that discussion of them should not be omitted from a book of this kind. Most of the information contained in this book has been recorded previously, and it is a pity that a volume in such a series is not more up to date.

J. M. MACKINTOSH.

The late Sir Frederick Hobday (1869–1939) was a master of the craft of surgery and of the art of eliciting his patient's trust; an innate tenderness flowed through his fingers. By his qualities and his book, *Hobday's Surgical Diseases of the Dog and Cat*, of which the first edition was published in 1900, Hobday raised the scope and standard of operative surgery on the smaller animals. The book's merits are in its descriptions and illustrations of the operative and after-care techniques, which, for the fifth edition (Baillière, Tindall and Cox, 1947; 21s.), have been brought up to date by Hobday's able disciple, Prof. James McCunn, of the Royal Veterinary College. The book's defect is its account of pathology, which needs a thorough revision.

BOOKS RECEIVED

[*Review is not precluded by notice here of books recently received*]

Brompton Hospital Reports. Vol. XV. 1946. (Pp. 192. 10s.) Aldershot: Research Department of the Hospital. 1946.

Includes articles on various aspects of chest disease.

Tuberkulose-Probleme im Kanton Zürich. Compiled by P. Press and M. Brunner. (Pp. 125. 10.80 Swiss francs.) Basle: S. Karger. 1947.

A monograph on tuberculosis in Zurich.

Detoxication Mechanisms. By R. Tecwyn Williams, Ph.D., D.Sc. (Pp. 288. 25s.) London: Chapman and Hall, Ltd. 1947.

An account of the metabolism of a number of organic substances used in medicine or industry.

La Psicosis Pelagrosa. By Dr. Bartolomé Llopis. (Pp. 206. No price.) Barcelona: Editorial Cientifico Médica. 1946.

An account of the mental changes that may occur in pellagra.

Chronic Structural Low Backache due to Low-back Structural Derangement. By R. A. Roberts, B.Sc., M.B., Ch.B., D.M.R.E. (Pp. 105. 45s.) London: H. K. Lewis. 1947.

Discusses structural vertebral defects causing backache, their diagnosis and treatment.

The Treasury of Human Inheritance. By Julia Bell, M.A., F.R.C.P. Vol. IV. Part V. Edited by L. S. Penrose, M.D. (Pp. 68. 21s.) Cambridge: University Press. 1947.

An analysis of pedigrees of cases of dystrophia myotonica and allied disorders.

Uncle Xavier. By D. H. Landels. (Pp. 192. 9s. 6d.) London: Hurst and Blackett.

A novel.

Pharmacology, Therapeutics, and Prescription Writing. By Walter Arthur Bastedo, Ph.G., M.D., F.A.C.P. 5th ed. (Pp. 840. 42s.) London and Philadelphia: W. B. Saunders Co. 1947.

This textbook for students and practitioners has been brought up to date and includes new material on BAL, folic acid, anticoagulants, and antibiotics.

Diseases of the Nose and Throat. By Charles J. Imperatori, M.D., F.A.C.S., and Herman J. Burman, M.D., F.A.C.S. 2nd ed. (Pp. 576. 72s.) London: J. B. Lippincott Co. 1947.

This edition includes new material on vitamin deficiencies, chemotherapy, and antibiotics.

Uterine Contractility in Pregnancy. By Douglas P. Murphy, M.D., F.A.C.S. (Pp. 134. 30s.) London: J. B. Lippincott Co. 1947.

A monograph based on uterine contractions in 1,200 pregnant women.

A Textbook of Clinical Neurology. By Israel S. Wechsler, M.D. 6th ed. (Pp. 829. 42s.) London and Philadelphia: W. B. Saunders Co. 1947.

A textbook for student and practitioner.

Selected Papers from the Royal Cancer Hospital (Free) and the Chester Beatty Research Institute. Vol. IV. (Pp. 381. 16s.) London: 1943–4.

Nicolaus Pol Doctor 1494. By Max H. Fisch. (Pp. 235. $7.50.) New York: Herbert Reichner. 1947.

Biographical and bibliographical details, with a translation of Pol's tract on guaiac.

Sir Frederick Banting. By Lloyd Stevenson, M.D. 2nd ed. (Pp. 446. 25s.) London: William Heinemann. 1947.

A biography, with many extracts from Banting's letters.

Bad Hofgastein. By O. E. Zimmermann. (Pp. 64. 4.50 Swiss francs.) Vienna: Springer-Verlag. 1947.

A guide to the spa for medical men. In German.

Terapia Endoarteriosa. By E. Melan and G. Enria. (Pp. 184. 900 lire.) Turin: Edizioni Minerva Medica S.A. 1947.

A monograph on treatment by intra-arterial injection of drugs.

BRITISH MEDICAL JOURNAL

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ARE WE CONVINCED?

The medical profession has lost little time in making an effective rejoinder to Mr. Bevan's reply to the Negotiating Committee. Our correspondence columns show that doctors are now fully alive to the implications of the National Health Service Act and becoming firm in their resolve to say "No" to a Minister whose method of negotiation is to alternate blandishments with threats in his successful attempt to avoid discussing those matters which the Negotiating Committee consider to be fundamental points of disagreement between the medical profession and the Ministry of Health. The Committee which met the Minister on Dec. 2 and 3 were certainly treated to a brilliant exhibition of dialectical skill. But this was not really the purpose of the meeting with the Minister. The purpose was negotiation, and Mr. Bevan once more proved that his interpretation of the meaning of this word differs from that which is usually accepted.

The expression of opinion in our correspondence columns against service under the Act in its present form received resounding support in two large and important meetings held last week in Wimbledon and B.M.A. House, addressed respectively by Dr. H. Guy Dain, the Chairman of Council, and Dr. Charles Hill, the Secretary of the B.M.A. Loud applause greeted Dr. Dain when he said, "We are not prepared to be in a salaried position in which the interference of a State department may come between us and the interests of our patients. With a salary even as small as £300 a year we shall begin to experience control." After a thorough and objective analysis of the Minister's reply Dr. Hill asked, "What does it all add up to?" And he went on:

> "There is one criterion by which as a profession we can measure these matters. It is not, I hope, a financial criterion. It is whether these proposals do or do not bring us closer to a whole-time salaried service of the State. That is the crucial issue, and on that issue we can command the support of the overwhelming majority of our profession."

The meeting was the largest that had ever assembled in B.M.A. House, and it listened with close attention to Dr. Hill's reasoned exposition of the case for over an hour. The loud applause which greeted the statement quoted was, therefore, all the more impressive. The Act, Dr. Hill observed, was the first step to the fulfilment of the Socialist programme for a whole-time State Medical Service. The general practitioner in the proposed new Service will be unable to begin work without the permission of a Committee in Whitehall; he will be paid in part by salary, and at any time the Minister by regulation can decree that payment shall be wholly by salary; he will no longer own the goodwill of his practice and will, therefore, lose the plot of ground which in a free society enables him to preserve his freedom as an individual. The consultant and the specialist will have to work in hospitals owned by the Minister of Health, who can under the terms and definitions of the Act at any time take over any institution in which sick persons are being treated. The sign-posts all point in one direction—control of the medical profession by the State. To make quite sure that the reins of control shall be firmly in one pair of hands the Minister insists upon the appointment by him of the Chairmen of various administrative committees down to the Local Executive Council. On Monday this week he sent a letter to the Secretary of the Negotiating Committee asking the B.M.A. to propose names for the members of the Medical Practices Committee. This letter is another indication that the Minister has banged the door in the face of the profession and is determined to go on with his Act in spite of the fact that he has failed to secure what he has stated to be indispensable—namely, the co-operation of the doctors of this country. And it is for the doctors of this country to decide whether a medical service begun in this way and initiated by a Minister who has shown himself contemptuously indifferent to reasoned arguments shall come into operation in July this year.

One thing is certain, and that is that the Act cannot come into operation if the large majority of medical men and women stand firmly outside the new Service on July 5. The size of this majority will depend upon the strength of the conviction held that a State Medical Service will be harmful to medicine and therefore to the public which the profession of medicine serves. If the profession is so convinced, then it should need but a modicum of courage to hold fast to that conviction. The medical profession is in a strong position and should be more conscious of that fact. Its services are indispensable to the welfare of the community and will, of course, never be withheld. But it can determine the conditions of its work and insist upon maintaining a framework of liberty and freedom which at the same time includes order. That framework of freedom and liberty is not present in the National Health Service Act of 1946, and the Minister has refused to modify its structure. Some medical men have argued that to oppose the Act is to oppose the will of the people as expressed through Parliament. But as Dr. Hill put it in his speech last week: "The Minister has told us of our right as individuals and our right collectively to determine our attitude to this Service. We are within our rights in saying 'No.'"

Mr. Bevan has refused the right of practitioners to appeal to the Courts against the decision of the Minister to remove him from the Public Service—a Public Service which is to include every man, woman, and child in the country. This right of appeal has been included in the Health Service Bill of Northern Ireland. This is "the new despotism"—the execution of justice by the head of an administrative department of State. He refuses to amend Section 35 in spite of the fact that no one knows exactly what it means. He calmly tells the profession that if it does not mean what he thinks it means he will, after the matter has been submitted to the Courts in the future by individual practitioners, amend it in order to make it mean what he thinks

it means. This attitude borders on the irresponsible. Until this Section is amended, as in due course it will have to be, no practitioner in partnership will know how he stands if he enters the Service on the appointed day. The Minister refuses to listen to the Negotiating Committee's objection to the basic salary. It should be clear that no objection has been raised to the use of a salary to attract men into difficult or undesirable areas or even to help the young man entering practice for the first time. During the debate on the third reading of the National Health Service Bill in the House of Lords,[1] the Government was defeated on the basic salary issue by an amendment proposed by Lord Llewellin that remuneration should be by capitation. The real reason for basic salary was given away by the Lord Chancellor when he said: "No one could have been, as I have been, Minister of National Insurance, without realizing that the success or failure of all our schemes depends in a very large measure on our getting satisfactory certification." As we said then, the reason for the basic salary is to control certification. The reason for it is distrust of the doctor. Because some doctors have been lax in certification—and the Lord Chancellor admitted that he had only come across a few instances—all doctors are to be treated as if they were offenders. The Lord Chancellor gave another warning which it is well to take to heart: "If you had abolished this per capita payment altogether and made it a straight out-and-out salary, of course that temptation would have gone." Once the National Health Service Act in its present form is in operation the Lord Chancellor's "out-and-out salary" will be introduced to remove any temptation medical men may have to act as free and responsible individuals.

The analysis made by the Negotiating Committee and again by Dr. Hill last week shows how unsubstantial is the Minister's case for abolishing sale and purchase of practices, for the payment of a basic salary, and for the distribution of doctors through the machinery of the Local Executive Councils and the Medical Practices Committee. The Minister admits that there will be very few areas in which there will be difficulty in providing doctors. Why, therefore, does he set up this expensive and cumbersome machinery for distributing doctors? One reason he has given for abolishing sale and purchase of practices is to secure the even distribution of medical men throughout the country. But if there are so few areas which offer difficulty why again make such expensive and sweeping proposals to deal with such a small problem? On another occasion, it should be recalled, the Minister referred to the sale and purchase of practices as "an intrinsic evil." To Mr. Bevan, no doubt, all private ownership is an intrinsic evil; we believe monopoly State ownership to be a greater evil. There is even a hint in the Minister's reply that he may regard the ownership of the doctors' house as an intrinsic evil when he makes his curious proposal that the Local Executive Council may be able to buy a house for the incoming doctor. Or this may have been another attempt by the Minister to put a favourable gloss on the finances of the medical man in the proposed Health Service. Many men, it would seem, have been misled by his statements into believing that general practitioners in the Public Service of the future will all be receiving an income of about £3,300. In fact, as Dr. Hill points out, the average gross remuneration per year for the general practitioner will be £1,816. The good general practitioner who by his efforts can to-day build up a successful practice will suffer financially under Mr. Bevan's proposals for remuneration. The practitioner whose practice is below the average may benefit financially under Mr. Bevan's proposals. These proposals in effect are part and parcel of the levelling-down process to which this country is being subjected by the present Government on the curiously unbiological thesis that all men are equal. One result of the National Health Service Act is already visible in the big increase in the numbers of those seeking to take special diplomas and in particular the M.R.C.P. The young medical man of to-day who believes that his ability may be above the average is doing all he can to avoid going into general practice under Mr. Bevan's Act. He is, therefore, trying his hardest to secure diplomas that will enable him to practise as a specialist or consultant. Although he will be as much a State servant in the Consultant Service as in the General Practice Service he does at least hope to escape the economic levelling down to which Mr. Bevan's proposals subject the general practitioner of the future.

The Representative Body is holding a special meeting whilst this *Journal* is in the press. We believe that this meeting will offer still another proof that Mr. Bevan has failed to secure the co-operation of the majority of the medical profession in the launching of his new Service. We believe, too, that the plebiscite to be taken on Jan. 31 will show that the majority of the medical men and women of this country will refuse to take service under the Act in its present form. Mr. Bevan still has time to amend the National Health Service Act so as to secure the willing co-operation of the medical profession in making it a success. If he does not seize his chance to act in a statesmanlike fashion then he will put the health services of this country into jeopardy, embitter the relationship between the doctor and the State, and sow among doctors themselves discords that will echo for years to come.

[1] *British Medical Journal*, 1946, **2**, 697.

BRITISH TRANSPORT MEDICAL SERVICES

The fourth and largest experiment in nationalization by the present Government was formally launched on Jan. 1, when the British Transport Commission came into being.[1] Throughout the nineteenth century the Houses of Parliament based their railway policy on the need for keeping competition alive.[2] The 1914–18 war brought this policy to an end and led indeed to its complete reversal in the Railways Act of 1921, which forcibly amalgamated practically all the railways into the familiar group of four. The Transport Act of 1947 unifies these into one body with the London Passenger Transport Board. In 1825 when the Stockton and Darlington Railway began to carry passengers there were 26 miles of track. The British Transport Commission takes over 52,000 miles of railway with 20,000 locomotives and 45,000 passenger vehicles. It will employ some 700,000 people. Government spokesmen have

referred to "a very poor bag of physical assets," with all equipment badly worn as the result of intensive wartime usage. The extent to which the railways are in need of new rolling stock is well known to the most infrequent passenger. Public transport whether by train, bus, or tube has a bearing on public health, and this may be the right time to urge upon the newly created British Transport Commission and its various Executives the need for bearing in mind the health as well as the safety of its customers.

Pulvertaft[3] pointed out recently that the maximum risk of air-borne infection, especially through droplets, is present when human beings are closely crowded together, as they are under modern transport conditions. At least twice a day every city worker is exposed to conditions "where no known method of air sterilization could possibly operate." This observation is "probably right,"[4] but that is not to say that modern railway coaches could not be so designed as to minimize these twice-daily hazards. One remedy has already been suggested.[5] American railway coaches provide comfortable high-backed adjustable seats which all face the same way. This makes it difficult for even the most garrulous passengers to project their infected droplets at each other. American coaches are of the one-compartment variety, air-conditioned and warmed, perhaps over-warmed by our standards, and with double doors and small vestibules at each end so that arrivals and departures are not commemorated by blasts of cold air.[6] An obvious question which it should be possible to answer is whether small herds in small box-compartments are less or more at risk than larger herds in larger coaches. It is the fact that some of our railway coaches were designed sixty or more years ago for a public not given to much travelling and in mortal dread of fresh air.[7]

In this country trains are trains and rarely undergo the kind of metamorphosis which became familiar during the war years, when there were few injured men who did not at some time experience the mixed blessings of a hospital train with its M.O. in charge, attached Q.A.I.M.N.S., and occasional V.A.D.s. Less romantic were the railway coaches which became large-scale disinfestors when the line at El Alamein had been held after the long retreat but typhus presented a problem almost as threatening as the Afrika Corps. Disinfestors are, of course, regularly used by all British railways, but these are not hurriedly modified coaches such as had to be used in Egypt. Long before the war the French had converted two coaches into a mobile radiological unit, and recently a new *x*-ray train was completed at Le Landy, just outside Paris.[8] It is now in use in the Northern Region, and since it is equipped to deal with 600 people a day it should be possible to examine radiologically every member of the staff of the Northern Region of the French Railway, and their families, once a year. It should be recalled in this connexion that the French Railway Medical Service is responsible for treatment as well as for examination and diagnosis.

In this country mobile examination coaches are employed on a limited scale, but here railway medical officers, like other industrial medical officers, have been little concerned with the treatment normally given by general practitioners. They co-operate closely with general practitioners but act as a rule in an advisory capacity and particularly on problems of rehabilitation. Each of the main-line railways has employed full-time medical officers for many years—in the case of the Great Western Railway for over 40 years. The London Passenger Transport Board, which was created only in 1933, appointed its first full-time medical officer in 1934. In the case of the main-line railways and of the London Transport, medical services were provided by full-time officers and a number of general practitioners with special railway experience giving part-time services. These services were designed to meet certain special and obvious needs. The over-riding considerations have always been and will continue to be the public safety and the well-being of the railway staff. Out of this there arises the question of fitness for entry into the service, with particular reference to tests of vision, including colour vision. Signalmen and engine drivers, for example, must have normal colour vision. The other work in which transport medical officers were soon involved was in connexion with Workmen's Compensation. It is expected that they will be relieved of much of their responsibility in this connexion when the National Insurance (Industrial Injuries) Act of 1946 comes into operation in July. The changes which will be brought about by this Act were commented on in these columns last year.[9]

Inevitably these medical officers, of whom there are now 30, soon became concerned with industrial medicine in its broader sense. So far as is known at present there are few occupational diseases peculiar to transport workers in anything like the way that there are well-defined occupational hazards in connexion with mining and other industries. There are, of course, some special injuries such as those in shunting accidents. It has also been alleged often enough that peptic ulcer is commoner in transport workers than in the general population, but no convincing evidence has yet been produced on this point.

The Transport Act will lead to a closer integration between what were the four main-line railways and London Transport. It should be recorded, however, that in the past few years there has been a close liaison between medical officers in these groups, discussing particularly such subjects as standards of vision, which previously varied to some extent. There will obviously be greater scope under the new arrangements, for instance, for standardizing records of sickness absence on a scale which may make it possible in future to answer the kind of questions that have been asked about the incidence of peptic ulcer and other conditions in special groups of transport workers.

For some years now the main-line railways and London Transport have had consultant medical advisers and have availed themselves of their specialized knowledge on different problems, but there has not so far been a formal medical research side of the transport medical services. Individual problems have been dealt with as they arose, with,

[1] *The Times*, Jan. 1, 1948.
[2] *Encyclopaedia Britannica*, 1946, **18**, 916.
[3] *British Medical Journal*, 1947, **2**, 517.
[4] Ibid., 1947, **2**, 535.
[5] *Lancet*, 1946, **1**, 94.
[6] Ibid., 1946, **1**, 104.
[7] *Lancet*, 1946, **1**, 179.
[8] *British Medical Journal*, 1947, **2**, 221.
[9] Ibid., 1947, **1**, 685.
[10] Ibid., 1946, **1**, 39.
[11] Ibid., 1938, **1**, 197.
[12] *Occupation and Health*, 1934, **2**, 1078. I.L.O., Geneva.

where necessary, the assistance and guidance of specialist advisers. We understand that London Transport made an informal approach to Prof. Le Gros Clark and his colleagues at Oxford on the problem of fitting the bus to the bus driver. It will be recalled that Prof. Le Gros Clark was responsible for much of the wartime work on this subject, some of which was reviewed in our columns.[10] This side of industrial health—what may be termed the physiological approach—is obviously one that will develop in the future.

Meanwhile the transport medical services can look back upon a useful record of service to the community and to railwaymen. The G.W.R. Medical Fund Hospital at Swindon, established in 1871, is well known, as are some of the railway convalescent homes. The L.M.S. Railway was early in the field of rehabilitation, establishing before the war a small centre at Crewe for what was then termed the "reconditioning" of injured workers.[11] The Transport Act of 1947 should allow of a closer integration of these medical services and a steady development in industrial health along the lines which are now becoming familiar and which involve job analysis, personnel selection, the provision of first-aid services, and the closer fitting of machines to men. It is unlikely that the present changes will have any immediate effect on railwaymen, on the travelling public, or on the transport medical services, but there are clearly opportunities for future development in which it is important that the health of the passenger should be regarded as second only to his safety in importance. Integrated records over a number of years may make it possible to answer some of the questions that have been asked in the past about particular conditions affecting transport workers. For example, is it true that railway officials in this country show lower mortality rates than the general population, except for diabetes and appendicitis,[12] and if so why? How many upper respiratory infections are contracted on the 8.10 every morning, and is there any reason why this number should not be diminished by investigation and more careful design of railway carriages? For many years it has been suggested that the railways should be nationalized. Now they are nationalized, and it remains to be seen what the future will hold for the travelling public, for transport workers, and for the medical services of British transport.

MYOCARDITIS

Owing largely to the exertions of McKenzie, Lewis, Parkinson, and others, abuse of the term myocarditis has been more or less corrected. Apart from rheumatic and diphtheritic carditis the condition is rarely recognized to-day. The reaction to misuse of the term may, however, have gone too far, as we are reminded by Ira Gore.[1] Auricular fibrillation or flutter, sudden death from ventricular fibrillation, partial heart-block, inverted T waves in the electrocardiogram, and congestive heart failure bear witness to the reality of carditis associated with lobar pneumonia. Repeated reports on Fiedler's or isolated myocarditis have testified to the existence of a form of heart disease characterized by focal necrosis, focal cellular reaction, and late focal fibrosis. Gore points out that a similar pathological picture may be found subsequent to streptococcal sore throat or the common cold, and should not then be identified with rheumatic carditis. Focal hyaline or granular necrosis with round-cell infiltration[2] has been demonstrated in many fatal cases of scarlet fever. The occurrence of pulmonary oedema, rise of the venous pressure, and inversion of T waves in acute nephritis and in toxaemia of pregnancy[3] is not satisfactorily explained by left ventricular failure secondary to acute hypertension; for in some of these cases the blood pressure is not nearly high enough to embarrass a healthy heart. The literature is studded with examples of carditis based on clinical, electrocardiographic, and post-mortem evidence in a host of infectious diseases, and it is time their significance was properly assessed. In this respect focal hyaline necrosis produced by digitalis,[4] by acetylcholine, and by vagal stimulation[5,6] should not be forgotten. Toxic carditis from other drugs may occur. Emetine, once regarded as particularly dangerous, was more or less exonerated in the last war, at all events in therapeutic doses. Sulphonamide hypersensitivity, however, provides an example.

Clinically, toxic carditis is not easy to recognize unless there are changes of rhythm or unless the condition is so advanced as to cause heart failure or sudden death. Other signs and symptoms, particularly tachycardia, are difficult to distinguish from those due to emotional disturbance. The electrocardiograph, however, provides a valuable diagnostic aid, and significant changes should be treated with respect.

1 *Amer. Pract.*, 1947, **1**, 292.
2 Brody, H., and Smith, L. W., *Amer. J. Path.*, 1936, **12**, 373.
3 Szekely, P., and Snaith, L., *Brit. Heart J.*, 1947, **9**, 128.
4 Büchner, F., *Arch. exp. Path. Pharmakol.*, 1934, **176**, 59.
5 Hall, G. E., Ettinger, G. H., and Banting, F. G., *Canad. med. Ass. J.*, 1936, **34**, 9
6 Manning, G. W., Banting, F. G., and Hall, G. E., Ibid., 1937, **37**, 314.

CHLOROPHYLL AS A BIOGENIC AGENT

The word "biogenic" is employed by some American workers to describe substances which appear to accelerate the healing of wounds. In the past it has been claimed that extracts of heart muscle and of embryonic tissues increased the rate of healing of ulcers and wounds; but controlled experiment has been difficult, and where controls have been devised the effect of these extracts on epithelial growth has been shown to be inconsiderable or even inhibitory. It is now suggested that water-soluble derivatives of chlorophyll exercise a complex but beneficial influence upon the healing of wounds.

Numerous pharmacological effects have been attributed to chlorophyll. Gordonoff and Hosokowa[1] found that an exhausted muscle-nerve preparation will contract when chlorophyll is applied to it. Other authors[2-8] have drawn attention to the chemical relationship between chlorophyll and haemoglobin and have suggested that chlorophyll stimulates erythrocyte formation and the elaboration of haemoglobin. Koenigsfeld[9] and Rydin[10] observed that chlorophyll increases the metabolic rate of tissues. Working in Burgi's laboratory, Rollet[11] reported that extracts of plant pigment stimulated tissue growth, and Gordonoff

1 *Z. ges. exper. Med.*, 1925, **46**, 454.
2 Burgi, E., *Schweiz. med. Wschr.*, 1937, **67**, 1173.
3 Fischer, H., and Schneller, K., *Z. physiol. Chem.*, 1924, **125**, 263.
4 Gordonoff, T., *Z. ges. exper. Med.*, 1927, **54**, 294.
5 Rentz, E., *Scand. Arch. Physiol.*, 1929, **57**, 121.
6 Zih, A., *Arch. ges. Physiol.*, 1933, **231**, 510.
7 Sagastume, C. A., and Pezzani, J. A., *Res. Fac. Ciene Quln.* (Univ. Nac. de la Plata), 1930, **7**, 7.
8 Rothemund, P., Inman, O. L., and McNary, R. R., *J. Amer. chem. Soc.*, 1934, **56**, 2400.
9 *Klin. Wschr.*, 1922, **1**, 322.
10 *C. r. Soc. Biol. Suède*, 1928, **99**, 1683.
11 Quoted by Gahan, Kline, and Finkel (1943), *Arch. Derm. Syph.*, 1930, **47**, 849.
12 *Z. vitamin Forsch.*, 1935, **4**, 213.
13 *J. Lab. clin. Med.*, 1944, **29**, 241.
14 *Amer. J. Surg.*, 1945, **47** 30.
15 Ibid., 1947, **73**, 37.

and Ludwig[12] showed that such extracts increase the rate of growth of fibroblasts *in vitro*. Smith and Sano[13] confirmed this finding and demonstrated that it was not due to the presence of vitamins B and C; Smith and Livingston[14] claimed that the same effect could be obtained by applying chlorophyll to wounds in man.

Bowers[15] now reports that after operations for pilonidal cyst, anal fistula, and empyema, and also in gunshot wounds, fungating tumours, burns, and certain ulcers, healing appeared to be accelerated after the application of water-soluble derivatives of chlorophyll. There was more rapid healing, prompt deodorization, and the growth of saprophytic secondary invaders was inhibited. The flow of pus was lessened when chlorophyll preparations were applied in cases with nasal suppuration and in certain inflammations of the eye. Bowers admits the difficulty of obtaining satisfactory controls in these conditions, but supports his own observations by the unanimous clinical impressions of more than thirty-five colleagues.

ALLERGY AND THE EYE

The part played by sensitization in diseases of the eye has been studied experimentally and clinically for many years. Many disorders of the eye are now attributed to bacterial sensitization and to allergic reactions to foods, inhalants, and contactants. Cooke[1] classifies allergic reactions of the eye into the following types: artificially induced, spontaneously occurring immediate weal, dermatitis, and bacterial sensitization. Walker[2] found that of 17,000 cases a year attending the Oxford Eye Hospital 340 (2%) had been satisfactorily proved to be allergic both by skin tests and by removing the offending allergens and then causing the symptoms to reappear on further contact. Of these 340 cases 55% suffered from conjunctivitis, 36% from migraine, 2.9% from keratitis, 3% from iritis and iridocyclitis, and 0.1% from cataract. However, ophthalmologists and allergists do not all agree on what they mean by allergy.

Duggan[3] defines allergy to include all those aseptic or abacterial lesions in which the common element of the basic morbid process is either increased capillary permeability or excessive contraction of smooth muscle in the arterioles or both. He develops the thesis that an allergic disorder of the ocular tissues can be interpreted as a manifestation of localized vascular dysfunction. Acute congestive glaucoma, herpes zoster ophthalmicus, paralysis of ocular muscles, vascular disturbances of the retina, acute optic and retrobulbar neuritis, uveitis, sympathetic ophthalmia, serous retinopathy, and episcleritis are all discussed on this basis. Treatment is by vasodilators. Duggan has been treating many of these conditions with vasodilators for some ten years with beneficial results. In the article referred to he describes four illustrative cases of herpes zoster ophthalmicus and seven cases of paresis of ocular muscles treated by vasodilators. As he admits, controls are difficult to obtain, but the times taken to cure seem to be much shorter than by the more usual methods of treatment. A man of 47 with herpes zoster ophthalmicus, keratitis profunda, and cyclitis was clinically cured in thirteen days. A woman of 34 with herpes of the left side of the forehead and a vesicle and marked oedema of the left upper lid, who had severe pain unrelieved for five days, was clinically cured in five days. The other two cases of herpes were in a girl aged 9 and a man of 23, both of whom had mild herpetic iritis; both were clinically cured in four days. In previous cases, summaries of which he records, marked benefit was obtained in episcleritis and scleritis, serous retinopathy, acute exudative choroiditis, iritis and iridocyclitis, and acute retrobulbar neuritis. His vasodilator therapy consists in intravenous sodium nitrite, 0.1 g. daily, with erythrityl tetranitrate, 30 mg. once or twice a day. Nicotinic acid, 100 mg. t.d.s., with erythrityl tetranitrate was used in one case.

[1] *Allergy in Theory and Practice*. 1947. Philadelphia: W. B. Saunders and Co.
[2] *Proc. roy. Soc. Med.*, 1947, **40**, 582.
[3] *Arch. Ophthal.*, Chicago, 1946, **36**, 551.

BRONCHO-CONSTRICTION AND ANTI-HISTAMINE DRUGS

The ability of antihistamine substances, sympathetico-mimetic amines, and other drugs to counteract histamine broncho-constriction in animals has received widespread attention, but until recently such tests have not been applied to human subjects because of failure to demonstrate significant broncho-constriction after doses of histamine that could safely be administered. Curry[1] has recently studied the effect of histamine on the respiratory tract in man. In 10 normal subjects and in 10 who had a history of severe allergic disturbances, including 5 with a history of asthma but free from symptoms at the time, no notable reduction of the vital capacity was observed following the administration of histamine intramuscularly or intravenously. In 8 out of 9 patients with active asthma and varying degrees of chronic bronchitis and emphysema, broncho-constriction, as shown by a reduction in the vital capacity, was noted after the administration of histamine. The vital capacity was reduced from 9% to 33% after an intramuscular injection of histamine, the maximum effect appearing 2 to 3 minutes after the injection with a return to normal in 20 to 30 minutes. After intravenous injection the vital capacity was reduced to between 27% and 71%, the maximum effect being observed usually 30 seconds after the injection with a return to normal in 5 to 10 minutes. The effective dose was between 0.08 mg. and 0.2 mg. of histamine base when given intramuscularly and between 0.02 and 0.03 mg. intravenously. Broncho-constriction in these patients could also be produced on administering histamine by nebulization or sublingually. The sensitivity to histamine varied from person to person, and in the same individual it varied with the severity of the asthmatic symptoms. However, during any one period of study the repeated injection of the same quantities of histamine by the same route brought about a similar degree of broncho-constriction.

In a further series of experiments on these histamine-sensitive patients Curry[2] investigated the antihistamine effects of various drugs. "Benadryl," 30 mg. in 50 ml. of normal saline, given intravenously before the injection of histamine, provided marked and rapid protection against the systemic and broncho-constrictive effects of parenteral histamine. Pyrabenzamine, 50 mg. orally, gave a slow and irregular protection, while its effect in different subjects varied, one showing no protection. Adrenaline intramuscularly and "aminophyllin" intravenously produced rapid and complete protection, while with ephedrine intramuscularly it was two hours before the protective action became complete. Atropine gave only partial protection. This "tracheo-bronchial reaction" to histamine in a sensitive subject provides a convenient means of assaying the effectiveness of antihistamine and allied drugs in man and is of especial interest in view of the recent development of the antihistamine group of drugs.

Dr. C. M. Fletcher, F.R.C.P., will deliver the Goulstonian Lectures before the Royal College of Physicians of London (Pall Mall East, S.W.) on Tuesday and Thursday, Jan. 13 and 15, at 5 p.m. His subject is "Pneumoconiosis of Coal Miners."

[1] *J. clin. Invest.*, 1946, **25**, 785. [2] Ibid., 1946, **25**, 792.

THE TIME FOR ACTION

DR. DAIN'S ADDRESS TO SURREY PRACTITIONERS

Wimbledon Town Hall was crowded on Sunday afternoon, Jan. 4, for a meeting of members of the profession from all parts of the county of Surrey which was addressed by Dr. H. Guy Dain, Chairman of Council of the Association. The chair was taken by Wing Commander H. M. Stanley Turner, who was supported on the platform by members of the Branch Council. The success of the meeting was largely due to the excellent work put in by Dr. T. W. Morgan and Dr. J. W. Starkey, honorary secretary of the Branch.

The Chairman, in introducing Dr. Dain, said that this was a meeting of doctors called irrespective of membership of the B.M.A. or any other body. They welcomed the statement on the Minister's reply which the Council of the B.M.A. had published (Dec. 27, p. 1046). It confirmed the views which many of them had held from the beginning that what was intended by the Government was the subjection of the private medical practitioner to the will of the politicians on the pretext of improving the health of the community. This was to be achieved by the conversion of the profession into a class of Civil Servants controlled and supervised from above. Some of them had been present at a meeting at Guildford recently at which German doctors testified that Hitler at the very inception of the Nazi regime imposed almost the same conditions on the profession in Germany.

They had waited long and patiently for some directive from the B.M.A., and it seemed, for a time, in vain. But the result of the recent discussions now published showed that there was no longer any room for doubt or misgiving. The irresistible force was about to encounter the irremovable obstacle. In Surrey they were solidly behind the B.M.A. A member of the Labour Party had told him that the Minister could rely on sufficient disunity in their ranks to be sure of getting what he needed, at any rate in the industrial areas, by the appointed day. The Minister might get a surprise. Control and regimentation were foreign to this country and to the profession. Only by conceding the fair and reasonable conditions asked for by the B.M.A. in the name of a free profession would the Minister get a helpful and co-operative service, and, what should appeal to him, a service without labour troubles.

Meetings with the Minister

Dr. H. Guy Dain, who was received with cheers, said: We have been talking for a long time and we are now faced with the prospect of action. The Minister has had it in his mind from the beginning that he would succeed in dividing us. I met him at various social functions and he never failed to tell me that the medical profession was divided. When he said it the first time I thought he was just being funny; the second time I attributed it to mere repetition; but when he said it the third time I decided that he was afraid we were not so divided as he liked to suggest.

We met the Minister in February, having forced his hand to the extent that he agreed to discussions with the possibility that amendment might follow. We determined not to enter into discussions on regulations but only on the Act as a whole, and he accepted that decision, though, as we think now, with no real intention of amendment. We set up committees and examined the Act from end to end according to the various types of work on which the profession is engaged. The more closely we studied the Act the more convinced we were of the rectitude of our principles and the necessity for their implementation before we could accept service. A close examination of the Act has made it more and more obvious to those who have taken part that it is essential to obtain amendment before service can be entered upon.

Something must be said about the interviews with the Minister himself at the end of the detailed discussions. His tone was very different from what might be inferred from his written reply. In discussing the general practitioner service he was just rude, blustering, and threatening. He left that meeting, no doubt, satisfied that he had given nothing away, and for my part I went away delighted because, not having conceded our principles, he had not offered us any small amendments which would have made our position more difficult and the issue less clear-cut. But when next morning we discussed with him the position of the consultants he was smooth and amiable. He said that he realized that there must be a fourth class of hospital patients, that in addition to those who had hospital services free, those who paid for hospital amenities but not for medical service, and those who paid the full cost of maintenance and a professional fee the amount of which was to be determined by the Minister, there must be a fourth class consisting of those who paid full hospital maintenance and such fee as the consultant thought the patients could afford.

Quite obviously he had the intention of placating the consultant side of the profession while being extremely rude to the general practitioner side. For my part I hope that consultants and specialists as well as general practitioners will have nothing to do with the Service until the proper amendments have been put into the Act. (Hear, hear.) In the document before us he has asked those concerned to co-operate with him and see how it works, and if it is found that things require amendment they can be amended afterwards. "'Will you walk into my parlour,' said the spider to the fly."

Remuneration

I want to take you through some parts of the Minister's statement. First, remuneration. It is said by some people to be a very attractive offer, by others to be not as attractive as it seems. Speaking as a general practitioner I had always supposed that if all my better-off patients were to be absorbed into the National Health Service I should have a much higher capitation fee than obtains in respect of people with limited incomes under National Health Insurance. Any capitation fee of less than £1 is likely to leave me worse off than at present.

This 18s. offer embodies two or three things against which we have set our face all along. One is the sliding capitation fee. As the result of the £300 basic salary, the greater the number of doctors who come in, the smaller the fee. We must have a fixed capitation fee. We shall require also that whatever capitation fee is fixed the mileage fund must be outside it. That is a separate consideration. Mileage does not apply to us all. It applies to certain doctors in certain areas, and it is not proper to allow it to affect the capitation fee applicable to the whole country. Incidentally I do not think the amount set aside from the pool will recompense rural doctors for the additional time their work takes as compared with the town doctor.

In a document which you will receive shortly you will find the capitation fee analysed carefully, and it will tell you exactly what you will be paid in different circumstances. The Minister states that with the maximum number on your list you would get £3,332 a year. This would apply only to very few people. Under N.H.I., which includes half the population, the average number on the list is 1,000; with the whole population included it may be taken at 2,000, so that instead of a gross income of £3,332 the practitioner would on average get a gross income of £1,816, or about £1,200 net. That makes the offer not nearly so attractive as it appears when it is said that instead of the present 15s. 6d. for insured patients the practitioner will get 18s.

The Minister makes great play with the fact that practitioners will earn outside money. But when everybody is provided for there will not be so much from this source. The public assistance doctor will disappear, the police surgeon and the post office doctor will find their work contracted, and there will not be much opportunity in many areas to earn money outside the National Health Service.

To basic salary we have fundamental objections. (Applause.) We are determined that we will not become directly paid salaried servants of the State, and that the control of a paymaster shall not come between ourselves and our patients. So long as the patient pays us, whether directly by fees or indirectly by coming on to our lists as in the N.H.I. arrangement, there is nobody who intervenes with a monetary consideration. We are not prepared to be in a salaried position in which the interference of a State department may come between us and the interests of our patients. Those interests must be primary. With a salary even as small as £300 a year we shall begin to

experience control, and there is nothing in the Act to prevent the Minister by regulation changing it into a full-time salary. Much of the Act will be worked by regulations which the Minister can issue at any time, and the only way of getting such a regulation annulled is by a prayer in the House of Commons, which is a very difficult and extremely unsatisfactory procedure.

Compensation and Goodwill

Two or three years ago, without prejudice, we discussed with the Government, when they said they proposed to do away with the sale of goodwill, the value of practices at that time, and, taking 17,900 general practitioners—principals—the figure of £66 millions was arrived at on the basis of 1938 values at two years' purchase and plus 16% betterment. The figure for betterment is ridiculous to-day, and therefore it is unlikely that £66 millions will go very far. I know doctors who are staying in their practices until the appointed day in order that they may then give up practice and take their compensation. Although you may get your compensation some day you will have to wait a long time for it, for the value of each practice in the country will have to be determined separately and added together before the individual share of the £66 millions can be ascertained. As I see it, that cannot be done in less than two or three years, and even if there is no difficulty over partnerships there will still be a long delay before anybody who retires will actually receive his compensation. Interest on the capital sum will be payable annually according to the Act, but our lawyers say it will be impossible to determine in the case of partnerships what proportion of interest should be paid to each partner until all the terms of the partnership have been completed. Those are quite technical difficulties, but they were made a good deal of in the discussions, though in view of the larger issues we do not want to spend too much time upon them.

We have said that we will not be paid by salary because it will interfere with our relationship with our patients, and for the sake of our patients as well as ourselves we want to retain the goodwill in our practices. I know that some people are apologetic about all this even among ourselves. We know, of course, the absurdity of the contention of Socialist spokesmen that it is a question of "selling" blocks of people. It is a question, not of selling people, but of selling or keeping the goodwill which by good work we have created in our practice, just as goodwill is created and recognized in any other profession. There is no reason why we should be ashamed of our possession of goodwill or want to give it up. Its retention is as much in the public interest as in the doctors'. It represents the capital value of doctors' good work, and the doctor should be able to dispose of it when he wants to go out of practice.

If we retain our goodwill we can retain our present method of distribution of doctors. Present methods have provided a very fair distribution, as is shown by the fact that only once in thirty-four years under N.H.I. has the Minister found it necessary to supplement payments to a doctor in order to persuade him to practise in an undesirable area. If that is so when the conditions of N.H.I. apply only to half the population, the forces of supply and demand with the whole population in the Service may be expected to suffice to fill in any gaps, and the problem should settle itself. If it does not, the Minister still could have power, such as he has to-day under N.H.I., to offer special terms to somebody for a special place.

If we surrender our right to dispose of our goodwill we have the position set out in the Act whereby the Minister retains the power to say that a man shall not practise in a particular area. Remember that with regard to the injunction against practising in a particular area it is not only the people who come in after the appointed day who are affected, but any doctor who wants to change to another district. To such a doctor the Medical Practices Committee could say that there was no room in the area to which he wanted to go. That is the effect of what is called negative direction in the Act. The amount of movement that takes place in the profession is astonishing and at first hardly to be believed. During the war the Association set up at Headquarters a register of all medical practitioners with their jobs and localities, and in order to keep track of the changes of address and the movements of doctors the Association keeps six whole-time clerks fully occupied. Imagine the problem which would face a Medical Practices Committee set up with the object of deciding whether a doctor making an application should be allowed to go to a particular area. The Minister says it would become automatic. We say, well, if it is automatic it is unnecessary, and whichever way you have it we don't want it.

Permissions and Controls

Having dealt with some of the more personal problems, Dr. Dain touched briefly on the remaining matters. One of these was the point that although all in practice on the appointed day might go into the Service, after that day it was necessary to get permission to go in. In 1911 Mr. Lloyd George made no difficulty on this point, but the present Minister would not concede it. He had said that he must have the right to refuse if he wished, and he remained tight on that, and said that doctors were free to stay out. Of course they were, but if the Service was the only means of earning one's living there was not much freedom about that.

Again, he had specifically refused any right of appeal to the courts, arguing that if he was to be answerable to Parliament for the success of the Service he must not be put in a position where he had to answer for a doctor whom he was forced to retain. The profession held that there should be a right of appeal from any decision of a tribunal to remove a name from the lists or from an adverse decision of the Minister.

A word or two on the hospital position. How were the staffs going to be affected? Somebody had said that the consultant on the staff of a hospital would have a position of great security and would be very much better off. But he had attended a meeting the other night of the Marylebone Division at which one Harley Street man in a telling speech said that all this talk about security in the Service for consultants was just rubbish, and that his only security was in his own good work. The Minister would have the power to alter the consultant's remuneration and terms of service. He would be in a salaried service.

In general practice they were enabled to adjust fees to changing money values, but when their income or the bulk of it came from a Government department they would have no such freedom. Those who were in insurance practice had known how in a slump the capitation fee was immediately reduced and with what difficulty it was raised again to meet different conditions.

Finally, there was the question of the membership of health committees of local authorities. Under the Education Act there was co-option to education committees of people interested in education, including teachers, but when it was suggested that local authorities should be compelled to co-opt doctors to their health committees the Minister said that he could insist on nothing of the sort and that it was improper to ask for it. But it had been done in the parallel case of teachers, and he hoped that when it came to the amendment of the Act this point would be insisted upon.

The Plebiscite

Dr. Dain continued: On January 8 there will be a meeting of representatives to consider details of the plebiscite and the lead to be given to the profession. On January 31 the forms of plebiscite will be issued, returnable by February 14. We are having prepared a concise statement of the points in the Act to which we are opposed and the reason for which we oppose them. This will be sent to every practitioner on the *Register*.

The plebiscite is not the end but the beginning. We may get an enormous majority against service. The Minister is banking on the supposition that that majority will not be real and that it will dissolve away by July 5, by which time he thinks he will have enough people to enable him to start the Service. That is what I have in mind when I say that action begins when the plebiscite result is out.

I have in front of me the draft form which will be put next Thursday to the Representative Body. I was in favour of the putting of only one question: "Are you willing (unwilling) to enter the Service?" But there are people under contracts of various kinds—whole-time officers of the Ministry and of local authorities and other bodies, medical teachers, and so forth.

We had to reconsider the form of question in the light of that fact and of the distribution of doctors in various types of occupation.

Dr. Dain here read the instructions on the draft plebiscite form and the proposed questions. He explained that the estimate of 13,000 general practitioners as constituting the strength of the vote required to give the necessary majority to justify the Association asking the profession not to accept service was the result of very careful thought. It was estimated what minimum of general practitioners the Minister would require in order to start the Service. It was decided that without more than 8,000 he could not possibly do so. The total number of general practitioners who could be available, after allowing for certain alien practitioners who might by that time be permanently registered, was computed at 21,000. If there were at least 13,000 who said they would not take part it was quite certain that a service could not be started.

We have tried to frame the questions (Dr. Dain went on) in such a way as to avoid any possible ambiguity. I see no reason why we should not have practically 100% of disapprovals. (Applause.) Even the public health medical officers and other people in whole-time employment see the red light in this Act. I have been asked that the plebiscite form should contain a legally binding agreement not to enter the Service. But it is not possible to construct such an agreement applicable to everybody, nor to have it signed and at the same time say that the vote would not be disclosed. In addition we do not want people to give legally binding agreements in this plebiscite. If we have a satisfactory majority in the plebiscite I suggest that each area in its different groups, perhaps through its Panel Committee, should get down to the practising doctor, and that doctors in their own areas should agree with one another on a form which they can sign not with the B.M.A. but between themselves. (Applause.)

If the B.M.A. organization is as good as I think and hope it is we should be able to do that between now and July, and make certain that the Minister will have no ground whatever for supposing that he will have enough doctors to start his Service.

Reassurances

What are the things which make it difficult? Here we come to the horrible word "fear." What are we afraid of? The consultant says, "On July 4 my present appointment to my hospital ceases. The hospital belongs to the Government and I must enter into a new contract. If I do not I shall lose my hospital appointment and with it my consulting practice." Fortunately that fear has little foundation. The Government will not be in a position to offer a contract to any consultant by July 5. The Spens Specialist Committee has still to report. After it has done so, arguments have to take place with the Treasury and with consultants themselves as to how it is to be implemented, and it will certainly be the end of the year before any terms can be offered to consultants. Their fears about replying "No" can be dismissed, and there is no reason why consultants and specialists should not stand in with the whole profession. (Loud applause.)

What about the general practitioner? One of them may say, "I am very much opposed to this Act, but I cannot afford to stay out. I have got boys at public schools, expenses are heavy, I must not take the risk." If one points out to him that being a man in well-established practice, as presumably he is, he stands to lose financially rather than to gain by accepting the new service, he may say, "But what if the panel cheques do not come in so that I may meet pressing liabilities?" Well, the Act provides that National Health Insurance stops when the other Service begins, and if you prevent the other from starting then N.H.I. will not stop and so you need not be afraid.

The general practitioner is in this cleft stick, that if the Act starts and he has not come in, then he loses his right to compensation. But if the profession decides to stay out, then we retain our goodwill, Mr. Bevan can keep his £66 millions, and we shall lose nothing. If there be difficulty of any sort that we have not foreseen then in one form or another we have a reasonable sum of money by which men might be helped over a short period to maintain their income and pay their insurance premiums, but there will, of course, be a great many doctors who will not be affected in that way. We shall go on attending our patients, private and other. Here I am rather inclined to quote a leader from the *Daily Express*, which asks where the public come in. The Service is going to cost £152 millions. But there will be no more doctors than before, no more nurses, no more hospital beds, nothing that anybody will get that he cannot get to-day, although the country will be spending £152 millions to get it.

Dr. Dain concluded: The profession wants a lead. I as Chairman of Council must be the spear-head of the Association in this matter. I say that the new Service as propounded in its present form is entirely unsuitable, entirely improper for us to accept, and we should endeavour to persuade our colleagues to vote against accepting any service under the Act in its present form. The B.M.A., so far as I have any influence, and the Representative Meeting will most certainly stand firm for that position. This is a demand for action—and the action is up to you. (Loud and prolonged cheers.)

QUESTIONS

At the conclusion of the address written questions were handed up to the platform from all parts of the hall, and were answered by Dr. Dain for half an hour or more until the Chairman asked the meeting to have some regard for the speaker's physical resources.

The first question was about partnerships. Dr. Dain said that they had been quite unable to obtain from the Minister's officers or the Minister himself a satisfactory statement on the position of two partners who were receiving by their agreement unequal shares. The wording of the Act seemed to make it impossible to arrive equitably and safely at any distribution of profits between partners except by each just taking what he actually earned himself. They had told the Minister that they considered that the Act would be certain to destroy partnership and to deal a serious blow to group practice in any form.

Asked what was being done to enlighten the general public on the position, Dr. Dain said that as soon as it was known what the answer of the profession was in the plebiscite the public would be approached and fully informed of the position. The most important thing to put to the public was the risk they ran of losing the undivided loyalty of the doctor as a result of the introduction of basic salary.

Another question was, "What percentage of doctors pledged themselves against the Act in 1913 and what proportion of that percentage adhered to their pledge?" Dr. Dain replied: "Somebody thinks we do not know what happened in 1911–12. We were then dealing with a more approachable Minister, who had given way to the profession on the principles they stood for, but did not give them enough money to start with, and as he raised the price from 4s. upwards, when he got to 7s. 3d. a large number thought that was enough and came over. That position does not arise to-day. Besides, we have better organization now, and we will jolly well see it does not happen this time." (Applause.)

Asked what steps would be taken to inform the public of the true implications, Dr. Dain said that they might take it from him that very effective steps would be taken. In general the Association was now on excellent terms with the Press. The Association had a very efficient public relations staff.

In reply to another question he said that in fixing on the figure of 13,000 general-practitioner votes against entering the Service allowance had been made for men coming out of the Services and newly qualified men finishing their hospital jobs.

What was the position of the whole-time medical officer of a local authority automatically transferred to a Hospital Board on the appointed day? Dr. Dain said that such a man was already in a salaried appointment and would continue to do his work. There was no reason to think that a large number of these men would not express themselves as against the Act.

Would not Mr. Bevan try to implement his scheme whether the doctors were there or not? Well, Mr. Bevan was very determined. He had declared to the dentists that he would start a service on July 5, dentists or no dentists. Were such expressions anything more than hot air?

In reply to one question Dr. Dain explained the position under the Act with regard to midwifery. The Minister had taken power to determine the qualifications of the doctors who

should undertake midwifery under the Act, and the profession had said that that must come out.

In the conversations Mr. Bevan had made it clear that no practitioner would be allowed to charge fees to persons on his list. Such persons could go to another practitioner, who would charge them a fee, but Mr. Bevan seemed to think that this should never be more than a single consultation fee, and that if a patient was dissatisfied with his doctor he should change to another list rather than seek treatment outside the Service. The profession did not assent to that.

When would Mr. Bevan want their answer? He had said that they would have six months to make up their minds. There would remain some months after the result of the plebiscite was known, and if the individual intended to accept service, or if the profession indicated its willingness to accept, this could be done any time up to July 5.

Some questions were asked and answered about the imminent accession of a number of alien doctors, displaced persons, on the permanent *Register*. Allowance had been made for these in the various computations. Incidentally Dr. Dain mentioned that as a member of the Council of the Royal College of Surgeons he was aware that a large number of young men evidently thought they would be better off in the new Service as specialists than as general practitioners and were seeking special diplomas, not always with success.

Might it not nullify the result of the plebiscite if the Minister afterwards made some alterations in the conditions? Well, the Minister had shown no sign of weakness, and if the profession gave an emphatic "No" he would find it difficult to start offering one thing or another between now and July 5.

Why not adopt the policy of passive resistance? The answer was that passive resistance was difficult, and what was wanted was not passive but active resistance as soon as it was known that the vote in the plebiscite had gone in a certain way.

Concerning hours of work, these must depend on the kind of work doctors individually undertook. "We shall never, I hope, expect that doctors under any conditions of employment will do office hours. We must be at the disposal of our patients when they are ill."

What was to prevent the Government enforcing on the State doctor union rules—an eight-hour day, a forty-hour week? "We are the people who will prevent any Government from enforcing orders upon others."

In closing the questions Dr. Dain said that members of the profession in other countries were watching events here. He had been impressed by this when attending the World Medical Association at Paris in September. Representatives of medicine in other countries were most anxious to know whether British doctors could stand for their own freedom.

A hearty vote of thanks to Dr. Dain was proposed by Dr. E. L. K. Sargent (Wimbledon) and seconded by Dr. S. A. Forbes (Croydon) and enthusiastically carried. The proceedings closed with a vote of thanks to the Chairman, moved by Dr. N. E. Waterfield.

THE PROFESSION AND THE MINISTER

DR. HILL'S ADDRESS

What the chairman described as a historic meeting was held in the Great Hall of B.M.A. House, London, on the evening of New Year's Day. It was convened by the Metropolitan Counties Branch and was addressed by Dr. Charles Hill, Secretary of the Association. The gathering was probably the largest ever assembled in the hall, where large numbers had to stand or sit on the floor throughout the proceedings, and, even so, many could not gain entrance and the speech was relayed to other parts of the building.

Dr. Hill spoke for an hour and 25 minutes and answered questions for a further half-hour. He made a careful and dispassionate survey of the Minister's reply to the case which had been put forward by the Negotiating Committee for amendment of the Act. A reminder of the fights of former years was on the platform in the person of Dr. Alfred Cox, for more than twenty years Medical Secretary. The gathering included a relatively large proportion of consultants.

Dr. R. W. Cockshut, chairman of the Metropolitan Counties Branch Council, who presided, said that it was now a considerable time since the Representative Body committed the honour and future of the medical profession into the hands of the Negotiating Committee. During those long months the Committee had met the Minister and his officers, and now the trust was handed back untarnished. Nothing had been given away.

The present great meeting, Dr. Cockshut continued, was the first large meeting of doctors to be addressed by Dr. Hill since the Minister's reply. They had reached a stage when the future of medicine was at stake; but the future of medicine was not in the hands of the Government or of Mr. Bevan, it was in the hands of the doctors themselves, and they had it in their power to ensure that the traditions they inherited and the hopes they held for the future were secured.

The Minister's Reply Examined

Dr. Charles Hill, who was warmly received, said: It is my job to-night to survey the reply that the Minister has given to the Negotiating Committee. That reply is prefaced by a series of observations addressed to individual members of the profession. Those observations are couched in seductive terms, possibly with a faint air of prefabrication about them. But we must not allow personalities to confuse the issue, and equally we must not allow the sweetness of the terms which the Minister uses to obscure our understanding of the real character of his reply. We must be careful not to mistake the gloss, the varnish, the veneer for the substance which lies beneath.

We are told in the Minister's reply that any doctor will be free to enter or not to enter the Service, or partly so and partly not; there is no compulsion. In one sense true, but if this Service comes into being in its present form the vast majority of general practitioners will not find the position to be that of entering or not entering. If the State is paymaster in respect of the bulk of the population many practitioners will find themselves faced with the choice of coming inside or starving outside.

The Minister goes on to say that the word "service" is perhaps a misnomer; but it is the word he himself has used in the designation of the Act. He says we shall not be Civil Servants. True, in the accepted sense of the term, but general practitioners and consultants will be salaried officers of an agency of the State, and, what is more, they will be entering a service which is administered by Civil Servants.

He then tells us how the doctor will be paid, and with a delicacy all his own he begins that summary by quoting the maximum remuneration. With the maximum number of persons on the practitioner's list he gives that remuneration as £3,300 a year. It would have been fairer to have recalled that under National Health Insurance to-day, with a maximum list of 2,500, the average is 1,000 insured persons on the list, and it may be calculated from this that in the future, in a service available to and utilized by 95% of the population, the average list will be approximately 2,000, and the average annual remuneration gross from the Service will be £1,816.

The Minister says there is no rigidity about the figure 4,000. We may infer that there is no rigidity either way, that the number can be increased or reduced by regulation as time goes on. He also says in an attractive phrase that if the doctor who has entered the Service wants later on to stop practice for any reason he can draw his compensation at once. There may be some who have turned over the prospect of entrance into the Service and speedy resignation, collection of compensation, and thereafter concentration upon private practice. I have been at pains to inquire exactly what those words mean. They mean that if a general practitioner emigrates to another country, if he removes himself from general practice altogether and takes up another form of medical practice, or if, leaving his own area, he goes into another to engage in private practice, he will then be able to draw his compensation and continue in private practice in the area in which he resides. I mention this to show that the remarks with which the Minister prefaces his reply should be scrutinized with unusual care.

Direction and Distribution

Passing from this preamble to the more detailed reply of the Minister we notice his statement that he has examined the seven general principles of the profession and does not believe that anything in the new Service is really in conflict with them. I would remind you of our principle which states that anything tending to make the medical profession whole-time salaried officers of central or local government is contrary to the best interests of the public and of the profession itself. The main question which we have soon to answer is whether in fact the proposals do involve such a tendency and, if so, what we are going to do to arrest it.

The Minister goes on to deal with distribution. Existing general practitioners will be permitted to continue in their own areas, but any newcomer into an area will be required to obtain permission. We have said that general practitioners should be free, without the necessity of permission from anyone, to set up in public practice in the area of their choice. We have objected to a state of affairs in which governmental licence is necessary before such choice can be exercised, and we have gone on to argue that by the creation of a comprehensive service and the payment of a capitation fee such errors of distribution as exist to-day will rectify themselves in course of time. We admit that where under-doctoring can be substantially proved it will be the Minister's duty to correct it by appointing to that area a general practitioner who is willing to go there.

But study the Minister's reply on direction or distribution with particular care, because the Minister rests his case for the abolition of ownership of goodwill in general practice upon the necessity for controlling distribution, with resultant interference with sale of goodwill. The Minister's first argument in favour of his distribution proposals is that no doctor in the public service can be allowed to attract to himself public money without public or official permission. Implicit in that argument is the assumption that the doctor would increase the public expenditure by choosing an area where he was not needed. That is not the case. The medical pool of capitation fees will be related to the number of persons who use the Service, and would not involve an increase in public expenditure for doctors to choose the area in which they desired to establish themselves in public practice. At least that would be the case but for the basic salary proposal. Indeed, it is in the distribution paragraph that we begin to see the motive which lies behind basic salary.

The distribution of doctors, says the Minister, would be in the hands of a predominantly medical committee, not subject to his direction—a plausible argument until we study the document lower down, where he tells us that the Medical Practices Committee is only going to find a few areas which are under-doctored. He is doing their work in advance for them, while at the same time he claims that they are an independent professional body.

He states that the Minister intervenes only where a doctor, desiring to go to a particular area, is refused permission by the committee and appeals to the Minister. The most he can do, he says, is to reverse a decision in the doctor's favour. That is a piece of special pleading. The main work of the committee will be to select from among the competing applicants, and when a doctor appeals against a decision he will be in fact appealing against a decision in favour of another doctor.

He tells us that there will be few areas where there is no need for new public practice or replacement. If that be true he is proposing to establish a vast system for the licensing of general practitioners for the solution of what he himself submits will be the problem of a few areas. The whole of his case for the abolition of goodwill is built on the argument for better distribution, and yet he says that the problem, like the servant girl's baby, is only a small one and that this control will be exercised only in a limited field.

Cumbersome Machinery

We stated in our document that the whole machinery was cumbersome. The Minister denies it, but I challenge anyone to deny that this Act lays upon the Medical Practices Committee the obligation in every case in which a doctor seeks to establish himself in public practice anywhere to satisfy itself that the doctor is needed in the area.

He says that the Medical Practices Committee, advised by the Local Executive Councils, will keep itself informed of the state of affairs in general practice throughout the country. This great meeting is a meeting of a proportion of the practitioners of London, and that one committee of wiseacres has to be fully informed of the detailed conditions of the areas in which you practise so that should one of you, unfortunately, die it will be immediately possible for the committee to determine whether the circumstances demand your replacement or not.

The experience of the Central and Local Medical War Committees proved that the problem is an immense and laborious one. There will be placed on the committee a burden which it cannot sustain You may think all this relatively unimportant, but it builds up the picture with which we shall finish, of the unwillingness of the Minister to make any change in this Act in principle or detail whatever the strength and validity of the arguments we advance.

The Ownership of Goodwill

Let me pass on—for I cannot pretend to be comprehensive—to the ownership of goodwill. The Minister declines to shift from his position. During the discussions there emerged the problem of partnership agreements. It is a technical problem, but the examination of it is an indication of the Minister's mind. As ownership of goodwill is abolished, with compensation, the authors of the Act thought it right and proper to define circumstances in which certain transactions would in fact constitute sale and purchase of goodwill. There is a penalty for such transactions—fine and/or imprisonment. For example, it is defined as an offence when two partners working together divide the emoluments in proportions other than those in which the moneys were earned. To that section there is a proviso exempting, according to the Minister, all existing partnership agreements, which agreements remain in operation as if no service had been introduced.

We took legal advice on that, the best we could obtain, from leaders of the Chancery Bar. Those of you who are interested in the legal argument will find intellectual entertainment in counsel's opinion (*Supplement*, Dec. 20, 1947, p. 151). They state that the Minister is wrong in his interpretation, and that only a proportion of partnership agreements, not the whole, are exempt from the disciplinary provisions, and they go on to say:

> "If Sections 35 and 36 are allowed to become operative without amendment the profession and the Ministry alike will labour under embarrassing uncertainty on matters of great importance until the debatable matters have been finally adjudicated upon, and in the meantime steps may have been taken on the footing of a construction which is ultimately found erroneous with unfortunate consequences to all concerned. In our opinion it would involve a real hardship to the practitioners concerned if they were required to submit to such uncertainty when it has been clearly foreseen and can be removed by an amending Act."

That is the opinion given, that the Minister's interpretation is wrong and that in any case such ambiguity exists that it is a matter of embarrassment and danger to members of partnerships to require them to decide whether or not to enter the Service without knowing whether the partnership deeds into which they have entered in different circumstances are still valid after the appointed day.

Counsel go a stage further. Taking the Minister's own interpretation of the Act, they go on to show that the Minister is incapable under the Act of putting his own interpretation into operation, that the Minister is incapable in law of paying the interest upon compensation moneys which the Act has promised shall be paid to individual practitioners. The Minister's reply in effect is this: "If in future I am proved in the courts to be wrong then I shall introduce legislation to put myself right." (Laughter.)

You see the position. It will be fought out in the courts by practitioners at their own expense, perhaps taken to the House of Lords at their own expense, and when that has been done the Minister or his successor, if he decides to observe the promise of the present Minister, will introduce legislation to put it right. But nothing can put right transactions which have

taken place after the appointed day and before such a decision by the House of Lords—transactions which have been undertaken in the mistaken view that the Minister's interpretation was correct.

The significance of this is in the Minister's real intention. Let me tell you what it means if the Minister's interpretation is right. It means that where two partners join the Service and one is required by the partnership agreement in certain circumstances to purchase the share of the other he may still do so, but he may be in the position of putting down £2,000 and registering for compensation £1,500 or less. True, the reverse may obtain. It is theoretically possible for the agreement to provide for a less generous payment than the payment from the compensation fund. But where one partner enters the Service and the other does not—and, mark you, the profession is free to join or not to join—and the one not in the Service dies or retires, the man in the Service may by the agreement be required to buy the practice of the man who had been outside, and having bought it there is nothing in the fund to compensate him for the loss of his capital value, despite the fact that, being a member of the Service, he is precluded from selling what he has bought.

If, on the other hand, circumstances should operate the other way, and the man inside the Service should die or retire, the man outside the Service is required to purchase the practice of the other. He can touch the income from what he buys only by himself entering the Service, and if he enters the Service he loses his power to sell his own practice and the share he has bought, without a penny of compensation. What does the Minister say? He says it is unfortunate that there is no compensation provided in the Act for the practitioner who, being in the Service, is required to buy the share of his partner who was outside the Service, but he has hit upon a way of making some money available to him. Money, after all, is saved in the compensation fund. If a man inside the Service sells the practice to a man outside the Service the Minister will use the money saved to compensate the man inside the Service who has bought the practice outside.

You know what that means. It means that for the man outside the Service who is required to buy a share of a practice inside the Service there will be expropriation, robbery, call it what you like. He is mulcted of a sum of money, he is prevented by law from obtaining it, and the Minister in effect says, "To the extent I have mulcted the man outside the Service I will use the money I have pinched to compensate the man inside the Service." Contributions to the church offertory are evidently welcome, even from the proceeds of picking pockets!

If the Minister is right, the situation I have described is the direct result of his interpretation. If he is wrong—and he waits for us to prove him wrong—he is going to introduce legislation to put himself right. The Minister has proved impervious to argument, legal or other. He is inviting members of partnerships to join the Service without his taking the trouble completely to clarify the position which will obtain if they do join the Service.

It is difficult to be dogmatic in one's estimate of the future but we have felt that this new Service in a number of ways renders it less likely that there will be partnership practice and assistantships with a view. You will realize the peril—safeguarded to some extent by the Medical Practices Committee—in which partners will be placed. For example, if an assistant is paid substantially less than he is held to be worth and is subsequently admitted to partnership it may be held that there has been a concealed sale and purchase of goodwill.

The Doctor's House

I must refer to the doctor's house. Should a doctor die and his widow sell the house to the incoming practitioner it will be an offence if the consideration for the sale is substantially in excess of the consideration which might reasonably have been expected if the premises had not previously been used for the purpose of medical practice. The widow, if successfully prosecuted, is liable to fine or imprisonment. The Minister's reply on this point is significant. He says that there is no risk of committing an offence if the house is put up to auction. The Act does not say anything about auction or method of sale. When the Minister does not like our interpretation of what the Act says he declares that it must be left to the courts to decide, but when the straightforward reading of the Act is inconvenient to him he gives his interpretation and asks us to accept it despite the plain reading of the words.

The Remuneration Proposals

Now for remuneration. You know the general conception. Take 95% of the population of the country, multiply it by 18s., and that is the medical pool. Out of the pool come mileage, temporary resident payments, payments for anaesthetics, emergencies, and so on. Take mileage out, and the pool becomes comparable with the central pool under N.H.I. to-day. That pool will be divided among local executive councils in a proportion, taking as index figure the number of persons in the area who have signed on to doctors' lists, plus one-third of those who have not.

In his illustration the Minister puts the maximum remuneration first. I do want to point out that in a free service which covers the whole population the number of items of service per person will rise. Since the inception of N.H.I. the number of items of service has trebled for the same section of the community. The number is between 5 and 6. If we take 5, then for 4,000 public patients there will be 20,000 items of service a year, considerably more than 100 items a day in the winter months and 60 to 70 in the summer. I mention that in order that it may be appreciated that the maximum on the lists is not to be everybody's prerogative—indeed, it is not within everybody's physical capacity. By analogy with N.H.I. the average is likely to be 2,000.

The Minister says that over and above the payment for the 4,000 public patients there will be lots of other things—public and private fees, maternity payments, mileage payments. What he does not say is that all district medical officer appointments will go, incidentally without a penny of compensation for loss of office; the work of police surgeons and post-office medical officers will contract at first and afterwards go; and that to undertake midwifery in the public service will be inconsistent with a complete list, indeed will inevitably mean a list which is substantially less than the maximum. In many areas private practice will be virtually non-existent.

But take the average—2,000 patients, giving a gross income of £1,816. An issue which arises at once is: Does this conform to Spens? The Spens Committee examined the range of general practitioner remuneration, and the report has been accepted by both sides. The Spens Committee, speaking in terms of pre-war money and net remuneration after allowing for practice expenses, said that 75% of practitioners should obtain over £1,000, 50% over £1,300, 25% over £1,600, and 10% over £2,000. Taking the 50% figure of over £1,300, and adding 30%—a low computation—as the betterment factor to bring pre-war values up to post-war, we get £1,690. Adjust this for practice expenses of 33⅓%—again a rather low figure on the returns prepared for the Spens Committee—and we get for 50% of practitioners a gross income of £2,535 or over. Can this be compared with £1,816 as the Minister's figure for the gross income of the practitioner having the average number of persons on his list? That "average" man is not quite the same as the "middle man" in the Spens figures, but the difference is probably not great; the difference between £1,816 and £2,535, however, is considerable. Even allowing for the value of the Government's contribution to superannuation the Minister's proposals do not appear quite to tally with Spens in the middle ranges. In the upper ranges the gross post-war figures for the Spens 10% group would be £3,900, comparing with £3,332, the Minister's figure for the man who has 4,000 public patients.

The Basic Salary

There is nothing more to be said about remuneration except this: there will be a basic salary of £300 a year, providing there is sufficient speed in the increase of the list. The basic salary is paid on the understanding that you need not have it for long. The effect of it is this, that the capitation fee for the first 1,000 patients is 21s. 2d., and for every patient over 1,000, 15s. 2d. I am taking the assumptions that 95% of the population are on doctors' lists and that 17,900 practitioners join the Service. The curious thing is that the greater the number of practitioners who join the Service the smaller will be the

capitation fee, for a greater number of sums of £300 will have to be taken from the central pool before the rest is distributed. The tapering capitation fee of which we have heard so much comes back in a new form.

Appeal to the Courts

You know the Minister's answer about the right of appeal to the courts. It is "No." He asks how could he be answerable to Parliament for the conduct of a doctor whom the courts had restored? You see the implication. He finds himself unable to accept the position that his verdict or the verdict of the tribunal should be subject to challenge in the courts. We have argued that in a service of these dimensions it must not be possible for a practitioner to find himself unable to earn a living while he is still regarded by the General Medical Council —another arm of the Government—as a fit and proper member of the medical services of the country.

The Hospital Aspect

Having completed this rapid survey of the general practitioner position, Dr. Hill turned to the hospital aspect:

There is one point in our original position which has not been pressed—the ownership of hospitals by the State. It was inevitable from Beveridge onwards that the State should accept financial responsibility for the provision of hospital beds and medical care therein, and the Government took the decision that led inevitably to ownership of hospitals, local authority and voluntary, by the State.

Expressing a personal view, I regret that we have not taken a stronger line in relation to that issue. For too long we have been making the bland assumption that to transfer something to the State is inevitably to ensure that it will be properly, wisely, and soundly administered. But there was no uprising of public or professional opinion on that issue, and the very fact of the passage of the Act so damaged the finance of many voluntary hospitals as to make the change almost inevitable. Therefore our representations were on other issues, the most important being that the Act enables a hospital monopoly to be established, transferring automatically to the State all the non-profit hospitals and giving the Minister also power to acquire land on which he may cast a lustful eye and which may include any hospital buildings. The Minister has also power to take over nursing-homes, so making independent practice difficult if not impossible. The hospital beds will be of three kinds, public, private, and intermediate, in which last the patient makes a payment only in respect of the amenity of the accommodation. There would be grave peril to consultant private practice if it were decided to develop intermediate accommodation at the expense of private.

When we met the Minister—I think I had better draw a veil over his demeanour in the discussion on the general practitioner phase—a strange blandness and friendly accommodation came over him as he turned to the hospital and consultant aspects of his reply. I wonder if he hopes to divide the general practitioners and the consultants in the dispute that lies ahead. Mind you, there was more sweetness of manner than promise to amend. He did not promise to amend anything. He said, "Of course, I shall not take over nursing-homes, subject to what the Regional Board has to say." He said, "I recognize the case for removing the ceiling on fees on a proportion of private beds." He gave other assurances.

I am not casting doubt on the word of the Minister as a man. But I do want to remind you of the danger of regarding ministerial assurances as binding on other Ministers. In November, 1939, a letter from the three Presidents was published in the medical press, saying that there was suspicion amongst some doctors that the Ministry of Health might be proposing to use the E.M.S. as the thin end of the wedge for a post-war State medical service, and assuring the profession, on the highest authority, that nothing was further from the Minister's intention and that all such fears were groundless. "That the voluntary system will continue there is no reason to doubt." That was based on the word of one Minister, an assurance upon which the profession co-operated in the E.M.S. during the war, and it has been—quite naturally—completely ignored by another.

Every hospital except those he does not want will be the property of the Minister; the Minister will determine by regulation the remuneration of general practitioners and consultants, and can change them when he likes; the Minister can increase the basic salary element in general practitioners' remuneration, and do it by regulation; the Minister can convert the consultants into a whole-time salaried service by regulation; he can make private practice for consultants well-nigh impossible, so compelling them to seek whole-time salaried service, and he has the power to establish a hospital monopoly and to make impossible the development of private hospital services or voluntary endeavours of one kind and another.

The Decision Ahead

After a brief examination of the superannuation proposals, Dr. Hill drew to his conclusion. He had with some necessary labour gone over the main features of the Minister's reply, and he went on to ask:

What does it all add up to? There is one criterion by which as a profession we can measure these matters. It is not, I hope, a financial criterion. It is whether these proposals do or do not bring us closer to a whole-time salaried service of the State. That is the crucial issue, and on that issue we can command the support of the overwhelming majority of our profession.

These proposals taken together add up, if not to a whole-time salaried service, to a form of service which could easily be translated into such State service. The general practitioner will no longer own his goodwill, be unable to enter public practice without the permission of a Whitehall Committee, be compelled to take a proportion of his remuneration in the form of salary, it being left to the Minister to determine in future—by the process of regulation—what that proportion shall be; in the hospital field, there is a possibility of a hospital monopoly; with the future of independent practice in the hands of the Minister, the future of the consultant section of the profession is in the hands of the Minister. Does that add up to a salaried service under the State? Does it lead inevitably to a whole-time salaried service of our profession? What is the evidence?

We have the evidence of the previously announced policy of the party in power as stated from time to time, never more picturesquely than when the Minister said, "You do not pick fruit when it is green, you wait until it is ripe." We have the evidence that these proposals commend themselves to those who honestly believe in a whole-time salaried service. Some of you may have read of the leakage in the *Tribune*. How that leakage arose we do not know. But here is a paragraph which is significant:

> "Politically the Minister's firmness has been most important. If he had been weak in face of this reactionary profession, which is being remarkably generously treated both with regard to compensation and income, it would have increased doubts as to the intention to carry out a Socialist programme."

This is part of the Socialist programme. This is a first step to that end. What are we doing? The Minister has told us of our right as individuals and our right collectively to determine our attitude to this Service. We are within our rights in saying "No." (Prolonged applause.)

The Plebiscite

There will be a plebiscite of the profession. The profession will have a clear opportunity of stating both its wishes and its intentions, and if a sufficient proportion of general practitioners give the necessary indication we shall tell the Minister —in the terms of the returns of the plebiscite—to think again. If we do not get a sufficient majority—a majority which of itself will offer the necessary reassurance to those opposed to this Service—we shall have to advise you that resistance is impossible and we must make the best of the situation. There must be a sufficient majority of the individual members of the profession, and it will be known in advance what that majority must be. Therefore practitioners opposed to the Service will know that they will be called upon to decline to enter the Service only if a sufficient majority of the profession is similarly determined and will act with them.

There will be no question, if that majority is achieved, of asking doctors to discontinue their work. Consultants will be asked to go on with their hospital work, but not to sign any

contract with Regional Boards, no more and no less. They may be reassured that such is the time which the Specialist Spens Committee may take to report and for that report to be examined that it is extremely unlikely that any Government will be in a position to offer them any contract until well after the appointed day. Other members of the profession will also be asked to go on with their work. General practitioners will be asked to go on with their work for their patients, but on a non-contract basis.

If we get a sufficient majority the period of uncertainty will not be prolonged. The first stage is to express yourselves quite plainly in the plebiscite return. It has been said sometimes of the B.M.A. that it has not given a lead. Let there be no mistake on this occasion. The lead is plain. In the view of the Council of the Association this thing is wrong, and its advice is that our profession should stand firm in resisting it. (Loud applause.) There is no ambiguity of any kind there.

A Word to the Consultants

To our consultant colleagues, I would say it may be true that the battle ground is in the field of general practice. To some extent that is inevitable. But it is also true that the freedom of one section of the profession is of paramount importance to the freedom of the whole. We say to our consultant friends, "We need a united profession, a profession in which all its elements, whether consultant or general practitioner, whether directly affected or not, acknowledge their duty in this regard to the public and to the future of the profession to which they all belong." The members of the profession in other countries, especially in the Dominions, are watching events in this country with anxious interest. It is our duty and our opportunity by standing firm to secure that this thing does not come into operation in its present form. (Renewed applause.)

Speaking Personally

In conclusion Dr. Hill took his audience back to a similar meeting in that Great Hall in the summer of 1943:

We were then considering a document which had been produced by Mr. Ernest Brown for a whole-time salaried service under the State. Such was the reaction of that meeting that very soon afterwards Mr. Brown placed those proposals, in his own words, in the discard. At that meeting I necessarily expressed a personal view, because by the sequence of events it was not possible to express an official view.

In the years between it has been my job to try to interpret the different moods of the profession (and they have differed over the years). It is four years to-day since I was appointed to the secretaryship of the Association, and throughout those four years I have been in all the discussions which have taken place. From time to time I have had my doubts on one point or another; at times it has been difficult to see the wood for the trees. All of us in the last few years seem to have had some difficulty, possibly as a result of the war, in seeing big issues in their full clarity.

We were right to undertake discussions during this past year, for we had everything to gain and nothing to lose by frank and detailed criticism and comment. The events of recent months have made it absolutely clear that these proposals mean and are intended to mean a whole-time salaried service under the State. And I have no doubt in my mind that our profession would be right to reject this thing by an overwhelming negative vote in the plebiscite shortly to be taken.

This is the last chance to do so. If we do have to enter the Service in its present form, life will still go on, but medical practice will have changed its character. There will be lost to the profession and to the public a form of practice which by its emphasis on the individual, by its insistence on the doctor–patient relationship, by its human yet efficient character, has been a credit to this country. These will be lost and lost for ever unless the profession forgets its past differences, learns a new loyalty, and stands with firmness for its principles. It is *now or never* for the profession to which we belong.

QUESTIONS

The remaining time of the meeting was occupied with questions sent up from the audience. Among the questions was, "If partnership is fraught with difficulties will not group practice have difficulties still greater?" Dr. Hill said that the fair answer was that if the Act came into operation in its present form there would be an entirely new kind of partnership difficult to envisage at the moment.

"If the B.M.A. considers that the new Service will mean so much extra work for the general practitioner, why is it opposed to regular hours and rota of duties?" Dr. Hill replied that in so far as mutual arrangements between practitioners were concerned it was a matter of common sense that they should be made. A whole-time salaried service might well mean a more ordered and leisurely life, but they could not have it both ways; they could not insist on the freedom of the individual doctor to conduct his practice in his own way and at the same time expect to have the conveniences of a whole-time service.

"What guarantee is there that the vote in the plebiscite will be adhered to by the individual?" In the first stage, none. They had to rely on the integrity of the profession. At the same time organizational steps would be taken to induce in the profession that warm feeling of fellowship which came from the knowledge that individuals were not standing alone. It was necessary to get away from the mentality which assumed that the profession was incapable of loyalty. This was an issue which affected the profession as a whole, and as a united profession they would deal with it.

"What will be the position of the man with specialist qualifications who wishes to continue in general practice?" Such an individual would be able, if he chose, to remain in general practice. There might be a movement to encourage those who were doing both general practice and specialist work to decide to go one way or the other, but there was no need for such a man to fear that he would be required to leave the general practice he preferred.

"What is going to happen with regard to 'displaced persons' on the temporary *Register*?" There would be added to the permanent *Register* within the next few months, as the result of an Act which had just received the Royal Assent, a considerable number of alien practitioners who had been on the temporary *Register* and others who had not. There might be between 3,000 and 4,000 altogether. They would be invited to express their views in the plebiscite, but account would be taken of this body of people in calculating the size of the necessary majority. It must not be assumed that alien practitioners would not stand in with the British profession.

"What is the significance of the Minister's comment that in two years' time the position will be reviewed?" The guess was made that 95% of the community would sooner or later use the new Service. That figure was subject to review in the light of experience after two years, which was right and proper.

Questions were asked about the wording of the question in the plebiscite. Dr. Hill said that this had been the subject of most careful consideration. The wording arrived at might not please some, but he asked that, having been thought out at great length, it should be accepted. "It may not be perfect, but it will give you an opportunity to say you will not touch this thing."

In reply to another question he said that private practices could still be bought and sold if no compensation had been paid in respect of them.

Asked why £300 was chosen as basic salary, he said that he had not the faintest idea. But the insistence on a basic salary furnished the justification for the Minister's distribution proposals. The salary element was a thing that could be increased as the years went by. It was the thin end of a big wedge.

Some questioners were evidently disturbed about the position with regard to N.H.I. if there was no acceptance of service on the appointed day. It was possible, said Dr. Hill, that there might be a period of conflict during which practitioners would provide a service for their patients on a fee-paying basis. It was a risk worth facing provided sufficient strength was shown in the plebiscite returns. "If you believe in a whole-time salaried service, you will express your approval of the Act on the plebiscite form, but if you do not believe in such a service and are willing to prevent its ever happening, then you will vote the other way, and you have the assurance that action will be taken only if a sufficient number of your colleagues think likewise, that number being sufficient to compel the Minister to think again."

MEDICAL NEW YEAR HONOURS

The names of the following members of the medical profession were included in a New Year Honours List published in the *London Gazette* on Jan. 1 :

G.B.E. (Civil Division)

Sir EDWARD MELLANBY, K.C.B., M.D., F.R.S., F.R.C.P. Secretary, Medical Research Council.

K.C.S.I.

Major-General (Local Lieutenant-General) TREFFRY OWEN THOMPSON, C.B., C.B.E., M.D., late R.A.M.C. Honorary Physician to the King. Director of Medical Services, India.

K.C.I.E.

Major-General ROBERT HAY, C.I.E., M.B., Ch.B.Ed., I.M.S. Director-General, Indian Medical Service

K.B.E. (Civil Division)

JOSEPH BERNARD DAWSON, M.D., F.R.C.S., F.R.A.C.S., F.R.C.O.G. Professor of Midwifery and Gynaecology in the University of Otago.

Knighthood

Colonel DAVID CLYDE, C.I.E., M.D., I.M.S. Honorary Surgeon to the Viceroy. Surgeon-General with the Government of Bengal.

His Honour TOM EASTHAM, K.C., M.B., Ch.B. Senior Official Referee, Supreme Court of Judicature.

JOHN PARKINSON, M.D., F.R.C.P. Physician in charge of the Cardiac Department, London Hospital.

HARRY PLATT, M.D., M.S., F.R.C.S. Professor of Orthopaedic Surgery in the University of Manchester.

Professor LUIGI PREZIOSI, M.D. President of the National Assembly, Malta.

C.B. (Military Division)

Major-General (temporary) (now Colonel) STANLEY ARNOTT, C.B.E., D.S.O., M.D., late R.A.M.C.

Air Commodore PHILIP CLERMONT LIVINGSTON, C.B.E., A.F.C., F.R.C.S., R.A.F.

Surgeon Rear-Admiral JOSEPH ALOYSIUS O'FLYNN, M.D., R.N. Honorary Physician to the King.

C.B. (Civil Division)

JOHN JARDINE, O.B.E., M.D., F.R.C.S.Ed. Chairman, General Board of Control for Scotland.

C.M.G.

ERNEST MUIR, C.I.E., M.D., F.R.C.S.Ed. Honorary Medical Adviser to the British Empire Leprosy Relief Association.

C.I.E.

Lieutenant-Colonel ALFRED INNES COX, O.B.E., M.R.C.S., L.R.C.P., I.M.S. District Medical Officer, The Nilgiris, and Superintendent, Government Headquarters Hospital, Ootacamund, Madras.

Colonel PAUL HERBERT SHELLEY SMITH, O.B.E., M.B., B.Ch., I.M.S. Inspector-General of Civil Hospitals and Prisons, North-West Frontier Province.

C.B.E. (Military Division)

Brigadier (temporary) RODERIC DUNCAN CAMERON, O.B.E., *M.C.*, M.B., Ch.B., late R.A.M.C.

Surgeon Captain CLAUDE KEATING, M.S.M., L.R.C.P.&S.I., R.N.

C.B.E. (Civil Division)

JOHN BURKE, M.D., C.M. For devoted service as a medical practitioner and surgeon in the districts of Grand Bank and Fortune, Newfoundland.

Professor NORMAN MCOMISH DOTT, M.B., F.R.C.S.Ed. For services as Director in Neurology and Neuro-Surgery, Brain Injuries Unit, Bangour Hospital, Edinburgh.

Lieutenant-Colonel ALBERT EDWARD EVANS, M.B., B.S. Medical Chancery Visitor, Supreme Court of Judicature.

WALTER ALLISON GILMOUR, M.D. Pathologist, Auckland Public Hospital, New Zealand.

Lady (ISABEL ELMSLIE) HUTTON, M.D. Lately Director of Welfare, Indian Red Cross and St. John War Organization.

WILLIAM GORDON MASEFIELD, M.R.C.S., L.R.C.P. Lately Medical Superintendent, Brentwood Mental Hospital, Essex.

GEORGE FRENCH STEBBING, M.B., F.R.C.S. Late member and Honorary Secretary of the Radium Commission (died Dec. 22, 1947).

O.B.E. (Military Division)

Surgeon Lieutenant-Commander JOHN WARD WALKER, M.B., Ch.B., R.N.

Major (temporary Lieutenant-Colonel) FREDERICK WILLIAM WHITEMAN, M.B., Ch.B., I.M.S./I.A.M.C.

O.B.E. (Civil Division)

HARRIET ELIZABETH ACHESON, M.D. Women's Medical Service, India. Vice-Principal and Professor of Obstetrics and Gynaecology, Lady Hardinge Medical College, New Delhi.

VICTORIA MARY CROSSE, M.D. Deputy Senior Assistant Medical Officer of Health, City of Birmingham.

THOMAS FRANK DAVEY, M.D. Medical Officer, Leprosy Service, Owerri Area, Nigeria.

Major GEORGE KENNETH GRAHAM, M.B., B.Ch., I.M.S. Lately Civil Surgeon, Peshawar, North-West Frontier Province.

Major JAMES GUTHRIE, M.B., Ch.B., I.M.S. Civil Surgeon, Tibet and Bhutan.

Major CORNELIUS JEFFCOTT HASSETT, M.B.E., M.B., B.Ch., I.M.S. Civil Surgeon, New Delhi.

NICHOLAS KEATING, L.R.C.P.&S.I. Senior Member, South Wales Panel, Silicosis Medical Board, Ministry of National Insurance.

CHRISTIAN WILLIAM FRASER MACKAY, M.B., Ch.B., Colonial Medical Service. Assistant Director of Medical Services, The Gambia.

HOFEEZUDIN SIRAJUDIN MOONSHI, L.M.S. For public services in Singapore.

Mrs. MARGARET STEWART MUNDAY, M.B., Ch.B. Lately Professor of Physiology, Lady Hardinge Medical College, New Delhi.

Lieutenant-Colonel WALTER SCOTT, M.B., B.Ch., I.M.S. Civil Surgeon, Central Provinces and Berar.

Major ARTHUR MANUS SHERIDAN, F.R.C.S.Ed., I.M.S. Civil Surgeon, Lucknow, United Provinces.

Major SAMUEL SHONE, M.D., M.R.C.P., I.M.S. Superintendent, King George Hospital, and Professor of Medicine, Andhra Medical College, Vizagapatam, Madras.

Major HAROLD STANISLAUS SMITHWICK, M.B., B.Ch., I.M.S.

WILFRED STANLEY WALLIS, M.B., Ch.B., Rotorua, New Zealand. For services to returned ex-Servicemen.

OSCAR REGINALD LEWIS WILSON, M.B., B.S. Principal Medical Officer, Ministry of Pensions.

Honorary O.B.E. (Civil Division)

SAMUEL LAYINKA AYODEJI MANUWA, M.D., F.R.C.S.Ed. Specialist in the Medical Department, Nigeria.

M.B.E. (Military Division)

Major (temporary) JOHN BISHOP BORTHWICK, M.B., F.R.C.P.Ed., R.A.M.C.

Major ROY THOMSON FLETCHER, M.D., R.A.M.C.

Flight Lieutenant THOMAS HARVEY, M.B., Ch.B., R.A.F.V.R.

Major (temporary) IAN ARCHIBALD JACKSON, M.B., B.Chir., R.A.M.C.

Captain CHEE JUAY POH, L.R.C.P.&S.Ed. Medical Officer, Singapore Volunteer Corps.

M.B.E. (Civil Division)

MARGARET KERR MENZIES ALEXANDER, M.B., Ch.B. Medical Superintendent, Christian Rainy Hospital, Todiarpet, Madras.

PUTHENVELIL MATHAI JOSEPH, M.B., B.S. Medical Officer, Seychelles Hospital, Seychelles.

JOHN ALAN BENNETT NICHOLSON, M.B., Ch.B., Colonial Medical Service. Medical Officer, Nigeria.

Mrs. MARGARET MARY SHEPHERD, M.B., Ch.B., late of Madras. For medical services.

Captain MORTIMER LAWRENCE AXEN STEELE. First Class Military Assistant Surgeon, Indian Medical Department. Medical Officer, Victoria Memorial Hospital, and Quarantine Medical Officer, Bahrain, and Officiating Residency Surgeon, Persian Gulf.

Bar to Kaisar-i-Hind Gold Medal

JEAN MURRAY ORKNEY, M.B., Ch.B. Chief Medical Officer, Women's Medical Service, India.

Kaisar-i-Hind Gold Medal

IVA NOEL GIBBINS, M.D. Medical Superintendent, Philadelphia American Hospital, Ambala City, Punjab.

JANE GRANT, M.B., Ch.B. Medical Officer, Church of Scotland, Seoni, Central Provinces and Berar.

HERBERT KIRBY. Doctor-in-Charge, Jorhat Leper Colony, Jorhat P.O., Assam.

VICTOR CLOUGH RAMBO, M.D., F.A.C.S. Doctor-in-Charge, Mission Eye Hospital, Mungeli, Central Provinces and Berar.

BHAGWANT KISHORE SIKAND, M.B., B.S. Medical Superintendent, New Delhi Tuberculosis Clinic.

RONALD WILSON THOMAS, M.B., B.S. Medical Superintendent, Baptist Mission Hospital, Palwal, Gurgaon District, Punjab.

The Ministry of Transport points out that owners should take particular care to instruct doctors on Scale I ships to make arrangements for the drugs, sundries, and dressings to be replenished regularly, and for the proper maintenance of the surgical instruments and appliances. The medical cabinet of Scale II ships should be replenished by druggists according to the procedure explained in Notice No. M.210, copies of which can be obtained at any mercantile marine office.

THE RED CROSS

WORK IN THE SECOND WORLD WAR

The Seventeenth International Red Cross Conference will be held at Stockholm in August, when a detailed report of wartime activities will be presented. As a preliminary a short account of the work of the International Committee has been published in Geneva under the title *Inter Arma Caritas*. On the day the war broke out the original four belligerents were informed that the International Committee had established the Central Information Agency contemplated under Article 79 of the Prisoners of War Convention signed in Geneva in 1929. During the war this Agency made out and filed 39 million record cards and forwarded 13 million letters. The longed-for parcel from home was received by prisoners on 36 million occasions. The workshop of the Agency was the Palais Electoral at Geneva, which was turned into a huge factory, with benches and business machines and crowds of workers, and there were 27 secondary workshops throughout Switzerland. One hint of the difficulty of tracing prisoners-of-war may be gathered from the statement that from a French village went a soldier named Jean Martin; to his mother there was only one Jean Martin in the world, but in the prisoner-of-war camps of Germany there were 15,000 Martins and 1,400 of them bore the Christian name of Jean.

The Red Cross Convention provides for the health of prisoners. Every prison camp must have its sick ward and every man the medical attention he requires. It is reported that in this respect the Convention was fairly generally observed. "Protected personnel"—persons engaged exclusively in attending wounded and sick—were picked out of the mass of prisoners and an endeavour made to secure their repatriation, but shortage of doctors and orderlies compelled their detention in camps to tend their compatriots, and the International Committee did its best to ensure that they were treated in accordance with the spirit of the Convention. The dispatch of medical relief had to be undertaken and there were frequent shortages of medicaments. Prostheses were in demand everywhere, but the greatest need was for dentures. With the help of instruments and appliances furnished by National Red Cross Societies, 64 dental surgeries were completely fitted out in the camps of Germany.

In the winter of 1941–2 thousands died every day in the Greek famine, and the health of the Greek people seemed to be threatened for a generation. The Turkish Red Crescent offered supplies, and supplies were also found in Switzerland and the Balkan countries. A chain of soup kitchens giving 800,000 helpings a day was improvised, and eventually a scheme was organized for monthly shipments from Canada to the Piraeus of 15,000 tons of wheat and 3,000 tons of other supplies, which were checked at every stage until their issue in the bakeries of the remotest Greek villages.

The difficulties behind this and much other work are not unduly stressed in the narrative. The achievement would have been on a much smaller scale but for the help of Switzerland. From the beginning to the end of the war the work of the International Committee cost 45 million Swiss francs, more than half of which was supplied by the Swiss Government and people. Even that immense sum, spent in six years, was equal only to the cost to all the belligerents of six hours of war. It is a fine record so far as Switzerland is concerned, and to Switzerland, too, fell the honour of providing at Geneva the one rent in the armoured curtain through which all this relief and succour passed. The greatest difficulty of all was the persistent reserve of the Soviet authorities with regard to the International Committee's offers of assistance. Letters sent to Moscow were unanswered, indirect negotiations led to no result, and millions of prisoners in Eastern Europe were deprived of the services which the Committee was anxious to render owing to the persistent silence—the unspoken "No"—of Russia.

A circular from the Ministry of Health requests hospital authorities to renew contracts for supplies and services due to expire before the "appointed day." They should be renewed on the basis and for the period which would have been adopted if no transfer under the Act was impending.

Reports of Societies

PLASMA PROTEIN FRACTIONS

At a meeting of the Section of Experimental Medicine of the Royal Society of Medicine on Dec. 9, 1947, Prof. H. P. HIMSWORTH presiding, the subject of plasma-protein fractions was introduced for discussion.

Dr. R. A. KEKWICK, Director of the Biophysics Division, Lister Institute, said that during the last ten years considerable advances had been made in the knowledge of protein constitution of biological fluids and tissues. These advances had been due chiefly to the application of improved electrophoresis techniques introduced by Tiselius. The scale on which separation of proteins could be carried out by electrophoresis was still very limited, but in conjunction with classical methods for bulk fractionation of protein solutions the method had proved of great service.

By the electrophoretic examination of normal human plasma five components were originally distinguished—namely, albumin, alpha, beta, and gamma globulin, and fibrinogen, the globulins differing in charge but not markedly in molecular weight. Recent studies had indicated the existence of two alpha and two beta globulins. The amounts of the various proteins in normal human plasma were roughly as follows: albumin, 55%; the globulins, 38.5%; and fibrinogen, 6.5%.

After describing the system of fractionation of human plasma with ethanol at low temperature and of the ether fractionation system, Dr. Kekwick discussed the clinical application of plasma fractionation products. Perhaps the most versatile of the products of plasma fractionation were fibrinogen and thrombin. As the clotting time of fibrinogen–thrombin solutions could be accurately controlled, a liquid mixture could be applied locally which subsequently clotted. The tensile strength of fibrin clots increased with fibrinogen concentration, and solutions of fibrinogen up to ten times the corresponding concentration in plasma were readily attainable. The clots formed from such solutions had been used to suture severed nerves by a soldering type of process. Rather lower concentrations of fibrinogen provided, with thrombin, an excellent adhesive for the application and fixing of skin grafts, dispensing with the necessity for pressure dressings. Grafts fixed in this manner vascularized with extraordinary rapidity.

Fibrinogen preparations also contained a material which was effective in reducing the whole-blood clotting time in haemophilia from, say, 75 minutes to about 15 minutes. An injection of 10 ml. of a 2% solution would keep the clotting time at this level for about 48 hours. Fibrin films, resembling sheet cellophane in appearance, had been successfully used as a dural substitute with marked absence of adhesion. The film was eventually replaced by fresh dural growth.

Somewhat less purified fibrinogen solutions were utilized in the production of fibrin foam. By suitable devices these solutions were beaten to a finely dispersed foam which was set by adding thrombin and then dried from the frozen state. Such foams, if wetted again, tended to shrink rapidly, but this could be prevented by baking the dried foam at 130–170° C. The dried foam would absorb almost its own volume of thrombin solution, and was used in conjunction with this for local haemostasis in internal surgery. The foam was allowed to remain *in situ* following operative procedures, and eventually became organized into the tissue without scar formation.

It had been established that the antibodies in many infectious diseases were associated with the gamma globulin of normal adult plasma. Concentrates of this protein had been successfully utilized in the control of measles and might be useful in infective hepatitis. For measles intramuscular injections of up to 5 ml. were required. The use of similar concentrates prepared from convalescent-plasma pools from other infectious diseases—for example, mumps—had been examined. Purified albumin solutions containing 25 g./100 ml. had been satisfactory for transfusion in cases of shock and hypoproteinaemic oedema. Further research might indicate the usefulness clinically of other fractions derived from human plasma.

Electrophoretic Examination of Plasma

Dr. NICHOLAS H. MARTIN, of the Biochemical Laboratory at St. George's Hospital, also referred with appreciation to the electrophoretic technique elaborated by Tiselius, which had proved a convenient method of control in many fractionating processes. Electrophoresis might be defined as the phenomenon of migration of particles in a medium under the influence of a current applied through that medium. The protein mosaic of human plasma was analysable, as Dr. Kekwick had stated, into five main groups: albumins, the three globulins, and fibrinogen. The foetus and the newborn infant appeared to have a relative excess of gamma globulins. The electrophoretic patterns of human serum and plasma were not the patterns of pure protein but of the complexes of proteins with non-protein substances. The albumin fraction might contain carbohydrate and fatty acids; certain of the globulins might contain lipoids and steroids. In other words, electrophoretic homogeneity should never be considered to imply chemical homogeneity.

After discussing the comparison of electrophoretic with salting-out methods, Dr. Martin considered the protein pattern in disease processes. In diseases involving the liver parenchyma the pattern varied with the stage and extent of the disease. In the early stages of simple uncomplicated infective hepatitis there was a relative depression of the albumin, with increase in the gamma globulin. As the patient recovered, the albumin tended to revert to a normal level and the circulating gamma globulin level to drop. The gamma and beta globulins might show some change, notably between the 14th and 30th days, and it had been observed that their deviation from normal was greatest in those patients having a tendency to relapse. He showed an analysis of a simple uncomplicated case of infective hepatitis and pointed out the migration of the "bound" bilirubin in the serum with the alpha globulin. That the actual recovery of the circulating albumin might not be as rapid as superficial examination of the electrophoretic data would lead one to suppose was shown in a table in which the total circulating components had been calculated on two analyses in a moderately sick patient, the first towards the end of the first week, the second early in the fourth week, during the recovery phase. Whereas the level of the gamma globulin had fallen to normal limits, the total amount of circulating albumin was still 15% below normal in the fourth week. In established chronic liver damage analysis showed an absolute diminution in the circulating albumin with an increase in the gamma globulin, which might represent 30% of the total circulating protein.

It must not be imagined that the technique of electrophoresis as at present developed was to be used as a routine tool in diagnostic procedure—on a level with, for example, electro-encephalography. Rather did its use lie in throwing light on the mechanism of existing procedure and in suggesting fresh approaches to the study of the fixed and circulating protein complexes in health and disease. It should not be used without an intelligent appreciation of its limitations. Electrophoretic homogeneity implied neither chemical homogeneity nor biological specificity; it was only one step—though a very important one—in the direction of the study of macromolecules.

ACUTE RHEUMATISM

At a meeting of the Devon and Exeter Medico-Chirurgical Society on Dec. 18 Prof. C. BRUCE PERRY gave an address on the aetiology and treatment of acute rheumatism.

Prof. Perry said that rheumatic heart disease accounted annually for 2% of all deaths and for 10% of all deaths under the age of 40. Haemolytic streptococci of no particular strain appeared to be the exciting cause, but the predisposing causes were at least as important. Scarlatinal rheumatism, so-called, was identical with acute rheumatism. "Miniature relapses," only recognizable when the patient was under close observation and indicated perhaps merely by a rise in the sleeping pulse rate, were common. Epidemics of acute rheumatism followed epidemics of sore throat. The disease reached its peak in this country in December and January and was most rare during August and September. In New York it reached its peak in March. In the Arctic regions and in the Tropics it was rare but not unknown. Children between the ages of 5 and 15 were most prone to the disease, and females were more commonly attacked than males, though carditis was often worse in the male and especially aortic endocarditis. There was a clear-cut social factor in the aetiology of acute rheumatism; it was commoner where there was poverty. The familial nature of the disease had often been noted, but it was difficult to balance the relative importance of heredity and environment. During the past 30 years there had been a decline in the incidence of this disease.

Treatment must be directed primarily against the carditis. Rest in bed, not flat but propped up on pillows, for at least six weeks was necessary. If there was any evidence, however slight, of continued infection the rest period must be prolonged for at least a month after all such evidence had disappeared. General hygienic measures must be adopted and local measures for the relief of joint pain. Salicylates in full doses, not necessarily combined with sodium bicarbonate, remained the best drug treatment. Penicillin and tonsillectomy were both valueless, and the results of the experimental prophylactic use of sulphonamides had not been impressive.

MEDICAL SOCIETY OF THE L.C.C. SERVICE

CLINICAL MEETING

At a meeting of the Medical Society of the L.C.C. Service, at Lewisham Hospital on Dec. 4, 1947, Mr. J. GABE opened a discussion on the treatment of undescended testicle. He showed four cases illustrating the results of different methods of treatment. He considered that the operation should be done before the age of 16. Before operation was undertaken the diagnosis must be certain. Testicles often descended into the scrotum as late as the fourteenth year of life, and he thought that a course of "pregnyl" was of value in hastening the descent of a testicle round about puberty. In bilateral cases he had found the Bevin operation valuable, but in unilateral cases generally considered it better to do the Keetley-Torek operation. The chief difficulty in the operation was due to the shortness of the vessels, and great care was necessary to avoid dividing so many vessels that atrophy of the testicle followed.

Thiouracil

Dr. GOTTLIEB read a short paper describing the results of treatment of 22 cases of thyrotoxicosis over the past three years by thiouracil and methyl thiouracil. Of these 22 cases four had eventually been treated by thyroidectomy owing to the occurrence of severe granulocytopenia. Of the remaining 18 patients, two died; one had had thyroidectomy performed three times, and the other had a severe aortic stenosis and despite temporary improvement during treatment, died of congestive heart failure. All but three of the cases had been treated with methyl thiouracil. The dosage adopted was 200 mg. three times a day for three weeks while in hospital, then 200 mg. twice a day for two weeks as an out-patient, followed by a maintenance dose of 50 mg. once or twice a day for six months to one year. There had been an invariable improvement clinically, but all except two cases had relapsed within two to twelve months of stopping treatment. He had had two cases with no relapse for one year and fourteen months respectively, following cessation of treatment. During the treatment a weekly blood count was done, and eight patients in addition to the four already mentioned showed granulocytopenia; his criterion for granulocytopenia was 4,000 w.b.c. and 1,800 granulocytes. He considered that the only drug of any value for granulocytopenia or agranulocytosis was penicillin.

Congenital Intestinal Obstruction

Dr. SIMMONS, after referring to three cases of congenital intestinal obstruction which had been demonstrated, pointed out that this type of obstruction was said to occur in 1 case in 20,000, and was due to malrotation of the mid-gut, causing obstruction by pressure from without. The signs and symptoms were similar to cases of congenital hypertrophic pyloric stenosis, except that no tumour could be felt, the vomit was always bile-stained, and the vomiting started earlier in life.

Mr. JEMSON, who had operated on the three cases, pointed out that the faulty rotation of the mid-gut left adhesions attaching the transverse colon to the duodenum. Referring to the investigations of Ladd and others in America, he said that the best operation in these cases was to divide the adhesions between the colon and the right upper quadrant of the abdomen, and push the whole transverse colon and ascending colon over to the left. This resulted in a broader base being given to the mesentery of the small intestine, which in these cases was practically absent, and thus helped to prevent the later occurrence of the volvulus. Mr. TANNER said that this condition might persist into adult life; he had had two such cases. Simple division of the adhesions was not adequate for cure in adults; a short-circuiting anastomosis was needed.

Correspondence

Censorship

SIR,—Mr. J. Johnston Abraham (Dec. 27, 1947, p. 1053) calls attention to a matter of first-rate importance not merely to the medical profession but to the nation as a whole—namely, will the doctor be free to write and publish under the new Health Act or will he not? It seems extremely doubtful if he will. The following question was asked in the House by Mr. I. J. Pitman:

"What are the general principles under which State employees are allowed or forbidden for payment to write for publication on technical matter peculiar to their specialization; and what differences are there in the particular cases of the Royal Air Force and the Air Ministry, the National Coal Board and decentralized coal units, and the medical services and the Ministry of Health when the appointed day is past?"

Mr. W. Glenvil Hall, Financial Secretary to the Treasury, replied on Nov. 6:

"A Crown servant must obtain the consent of the head of his Department for the publication of any work the subject matter of which is connected with his official duties or those of other public servants. In cases where the work is considered to owe its value exclusively to the author's ability and research, no special financial arrangements are made. In other cases the Government may either arrange for official publication or stipulate that copies should be supplied for the public service at a special rate.

"These rules apply to the Royal Air Force, the Air Ministry, and the Ministry of Health. I have no information about the arrangements in the coal industry, which are a matter for the National Coal Board itself. I understand that no rules have yet been made for employees of the new bodies set up under the National Health Service Act."

From this reply the position of the doctor to be employed under the National Health Service Act is somewhat obscure. If he is classified as a Crown servant then he will apparently rarely, if ever, be entirely free to write, and there is considerable danger that regulations would in due course be laid down by the Treasury for doctors serving under the National Health Service Act, on lines similar to those applying to the Civil and other services. Were such regulations to be applied the present freedom of expression of medical opinion would cease. It therefore appears most urgent that the position should be clarified.—I am, etc.,

London W.C.1. R. F. WEST,
Chairman, Medical Group of the Publishers Association.

National Health Service

SIR,—I append five subjects for G.P.s to consider.

Remuneration.—(*a*) Basic salary opens door to a full-time salaried service, disapproved by the Spens Committee. (*b*) Both salary and capitation rate have never been discussed nor agreed to. They can be altered by the Minister whenever he considers necessary and certainly in two years. (*c*) Capitation rate for 1,000 patients is 21s. 1d.; capitation rate for 4,000 patients is 16s. 8d. This must act as a discouragement to men working in an industrial district, where private practice is likely to be scarce.

Compensation.—(*a*) £66,000,000 computed in 1938 is probably not adequate in 1948. (*b*) It may prove impossible (anyway it will take years) to estimate what any one practice should receive, as all practices have to be investigated before any one can be valued. (*c*) The Minister's decision that a doctor not joining on the appointed day shall forfeit his claim to compensation savours of bribery and intimidation.

Midwifery.—In England and Wales all practitioners must satisfy a local committee that they are adequately qualified to practise midwifery within the Service.

Direction.—The Minister states that a doctor is free to practise where he chooses. This immediately becomes false once the Service is established. Local committees will decide whether an additional doctor may practise in their area and will have the disposal of all Service practices and houses.

Control.—The Minister retains power to appoint *all* chairmen of *all* committees for *all* time, and ultimately to approve all members lay and medical. Under these circumstances what hope is there of amending the Act (save favourably to the Ministry) once the Service is started?

Health Centres are in abeyance. Doctors and their unfortunate wives will be expected to make good the rash promises made by the Ministry. In my opinion G.P.s would be well advised to say "No" to working the unamended Act.—I am, etc.,

Birmingham. WM. WATSON NEWTON.

SIR,—Surely the time for clear thinking has now arrived; we must face facts, and face them unflinchingly. It is obvious that the Minister intends, for political reasons, to have a full salaried service—and that within two years. If we sign on the dotted line to one set-up of regulations, it will be well within his power to alter our remuneration and/or our method of payment at any time he likes. Once we sign we are for ever in the clutches of the Minister, and the freedom of the doctor and patient will be gone for ever. Partnerships the Minister pretends to welcome but obviously intends to destroy, the present Act making all our old partnership deeds quite unworkable. Ministers dislike partnerships; groups tied together by many bonds are always stronger than the same people existing as separate entities.

There are numerous young men in the profession who see in State control some semblance of personal security. I would beg them to realize that their "Yea" for the questionable privilege of doubtful security may well remove from the people of their country almost the last shred of real freedom which still remains to them.

The B.M.A. has had a very difficult task and has lately done it with courage, but many think, as I do, that had their earlier attitude to the Government been firmer they would have received greater support from the profession and more respect from politicians. At all events, it is not too late for them to put the profession on its guard, and when the time for the plebiscite comes let us have no more ambiguity but rather a strong pointer in the direction of freedom, so that they may be blessed not only by the profession as a whole but by all thinking men and women as the champions of independence and liberty.—I am, etc.,

Wokingham, Berks. RALPH ROSE.

SIR,—I entirely agree with Dr. A. F. Chalkley's appeal for plain speaking (*Supplement*, Dec. 13, 1947, p. 139) and for freedom. Let us have the courage of our convictions. Very few in our profession really want State medicine, but they are afraid to back their opinions with action or even to state them clearly. Why? I believe it is due to four things—viz.:

(1) Muddled thinking. One often hears it said, "Probably the Ministry knows what it is about." Yes, but what is it about? Certainly not the highest good of the greatest number. It is out, "by the deadly method of one by one," for State Socialism, which is State monopoly of all the professions, beginning with medicine. Ahead lies supreme political and economic bureaucracy, with slavery for everyone else.

(2) Fear of insecurity. Alas, this un-English craving for security has grown on us. Safety first is a very poor motto, and would never have won the war. Too many younger members of our profession are terribly afraid of insecurity and seem to prefer safety to freedom itself. As an older friend said

to me, "We had the same difficulties and chances when we came out of the Services in 1919. Why can't the modern young man do as we did?"

(3) The habit of obedience. The tragic result of our patriotic obedience during the war has made us all in danger of losing our sense of individual initiative and responsibility. And again it is our younger members who are far too ready to toe the line and become yes-men. Let them have the courage to say no.

(4) Plain disregard of facts. It is *we* who have the whip hand, not the Minister of Health. He can do nothing without us whatever he may say. It is we who are in the strong position *now*, but we are in the middle of a terrific battle, and if we fail we betray the side of freedom in every department of our life in England and the freedom of those who come after us. Let us realize this temporary Minister of Health is only like a very difficult patient determined to get his own way by any means. Let us be more determined ourselves not to be bullied, browbeaten, or fooled. The medical profession has with immense patience tried its best to get Mr. Bevan to co-operate. He has not moved an inch. He never had the slightest intention of co-operating. Mr. Bevan is an extremely ambitious politician. He has failed miserably over his vaunted 1945 housing schemes. Now he is trying desperately by very clever alternations of pay-packet promises, bluster, and pretended care for the health of the people to bolster up his own failing prestige. Let us call his gigantic bluff! Finally, let us remember this all-important fact. Within a fairly short time, possibly this year, this totalitarian Socialist Government will be *superseded* by a *really progressive one*. Then we shall get a Health Bill we can all support freely.

The leading article "Mr. Bevan's Gloss" (Dec. 27, 1947, p. 1037) puts the case very fairly and clearly. Now it is up to each one of us individually. Let us remember our tradition of courage, independence, and self-sacrifice. Let us accept our great responsibility to our nation, our patients, and our profession, and for their sakes as well as our own say in the coming plebiscite a categorical "No, we will not serve in any way under the present Act."—I am, etc.,

London, S.W.1. SYBIL TREMELLEN.

SIR,—May I try to answer a fear which I have heard expressed? "I do not want to join the Service, but I have no alternative. I must support my wife and family." This line would inevitably ensure only a small minority of opposition to the Minister. "It will be all right if we get a good majority." We shall get no majority if we cannot each decide alone to do what we think right. The hope for a good majority shifts the responsibility from ourself to our professional neighbours.

To answer the question, If the worst comes, and I find myself alone outside the Service, how can I earn my living?—First, my panel and contract patients will unwillingly and complainingly overcrowd the waiting-rooms of doctors they have not hitherto wanted to choose. Then some few of my "private" patients will continue to support me. Soon after this my neighbours' duchesses will refuse to wait in their crowded rooms and will transfer to me. Then there are all the regular "nuisances" who are never patient or amenable to the discipline of regular times for sending their "urgent" messages. They will soon find I have time to give them. Of course I shall have to make changes in my hours and find an entirely new and experimental scale of fees, but still, if the worst comes, it will be possible to make a living—perhaps a good one. And if the worst does not come, and we all stay outside together until the Minister learns that "sincere co-operation" entails give as well as take, then the best will have happened.—I am, etc.,

Crowthorne, Berks. H. D. FORBES FRASER.

SIR,—At present we enjoy freedom and owe allegiance to none save our patients. The country has a good medical service, but it can be improved upon with the co-operation of the Government. In working for improvement we are not concerned with our own political beliefs or the particular form of government which happens to be in power. Governments will come and go, but medical progress must be directed towards a fixed ideal, aided or hampered perhaps by governments, but certainly not influenced by them.

Since the Socialist Government came into power the necessity of clinging stubbornly to our freedom has become more and more obvious. Socialist authorities have tried to force doctors into trade unions. Why should a professional man be required to associate himself with an organization originally intended for the protection of employees against employers, and legitimately concerned only with industrial matters? When one considers the way in which trade unions have become increasingly powerful, and increasingly preoccupied with political issues—a sphere incidentally in which they are quite undemocratic—then their danger is obvious. Since the inception of the present Government we must all have received communications urging us to join a certain medical union affiliated to the T.U.C. This union disclaims any political affinities and thus, in my opinion, denies the only logical reason for its existence.

The present Government has already given rise to doubts regarding its moral integrity; already we have been given instances where materialistic progress has been the excuse for violation of moral principles. I believe that in spite of the honeyed words of Mr. Bevan he seeks to use the National Health Service Act as a means to a political end—i.e., the confusion and gradual enslavement of a profession whose political views are predominantly anti-Socialist.

It would be well to take heed of Mr. Churchill's pre-election warning of the dangers of totalitarianism in a Socialist state. If we allow ourselves to be lured by Socialist bait into captivity, then we are unworthy of our great heritage and will be cursed by many generations of medical men to come. Politicians can play a clever and often underhand game to gain their own ends, and in dealing with them we must unite in rejecting any plan of any government which involves even the remotest danger of encroachment upon our liberty, and in addition avoid being lured into any suspicious "medical" organizations. "Necessity is the plea for every infringement of human freedom. It is the argument of tyrants; it is the creed of slaves."—I am, etc.,

Edinburgh. W. B. LAING.

SIR,—Two years ago the B.M.A. first published what it chose to call the seven principles of the profession in its relation to the new National Health Service Act. The leading article in the issue of Dec. 20, 1947 (p. 1002), concludes with the following paragraph: "Preoccupation with financial and other details . . . must not obscure the main issue which the medical profession now has to face. This issue is summed up in the first of the principles enunciated by the Negotiating Committee exactly two years ago." In two years' time the seven principles, like the ten little nigger boys, have been reduced to one —"the main issue." What about the other six principles? Are they no longer important, or (as I suspect and believe) does the Negotiating Committee agree with the Minister that the Act does no longer conflict with these principles?

Let us examine the first principle, which reads: "The medical profession is, in the public interest, opposed to any form of service which leads directly or indirectly to the profession as a whole becoming full-time salaried servants of the State or local authorities." It is high time that we discarded such phrases as "in the public interest," "desiring to secure for the people the best possible health services," "grave hardship to the patients," as they are mere cant and humbug. Let us at least be honest and state that what we are really studying is our own interest first, last, and always.

Read the Negotiating Committee's case, and especially that part of the case which deals with general practice. This takes up some six pages of the document, and, of these, three pages are taken up with arguments about existing partnership agreements and partnerships after the appointed day. What is this to do with the public interest and how can this "*secure for the people* the best possible health service"? I repeat that this is mere cant and humbug, and that the first principle ought now to read, "The medical profession is *in its own interest* opposed, etc."

The main point at issue between the Negotiating Committee and the Minister at present is the question of buying and selling of practices and the mode of payment by salary or capitation fee. The leading article states that the Minister "refuses to meet the profession's strongly rooted objection to a basic salary." May I remind you of a document which has been discreetly pigeon-holed by the leaders of the B.M.A. since 1944. I refer to the questionary issued in March, 1944, by the B.M.A., the replies to which were published in the *Supplement* on Aug. 5, 1944 (p. 25). These replies give the only definite figures available on the question of payment.

Question 18 (para. 29) asks, "If a doctor is not working in a Health Centre, but in 'separate' practice, how should he be remunerated in a National Health Service?" Reply:

Description of Group	Replies in Percentages		
	Salary	Small Basic Salary plus Capitation Fees	Capitation Fees
All	15	35	44
General practitioners ..	12	28	55

I have not included all groups. It is fair to assume that those who voted for salary only, if given a second choice, would prefer a small basic salary plus capitation fee to payment by capitation fee alone. This gives us a figure in all groups of 50% who are not in favour of payment by capitation fee only. In the general-practitioner group the figure is 40% not in favour of payment by capitation fee alone, but the number of general practitioners who are in favour of payment by capitation fee alone is only 55%, therefore there must be 5% of general practitioners who do not care how they are paid and did not vote. From these figures I fail to see "the profession's strongly rooted objection to the basic salary."

The next point I wish to make concerns the statement in the leading article that the Minister refuses to give in on the question of "the retention of the custom of buying and selling practices, which general practitioners as a whole regard as essential to their freedom." Question 22 (para. 33) asks, "Do you think that the sale and purchase of publicly remunerated practices should continue or cease?" Reply:

Description of Group	Replies in Percentages		
	Continue	Cease	Don't Know
All	33	52	13
General practitioners ..	44	44	10

Question 23 (para. 34) asks, "Should the principle that *all* general practices may be sold and purchased be maintained or abandoned, on the assumption that adequate compensation is paid to existing owners?" Reply:

Description of Group	Replies in Percentages		
	Maintained	Abandoned	Don't Know
All	33	56	10
General practitioners ..	39	53	6

These figures definitely show that general practitioners as a whole *do not* regard the custom of buying and selling practices essential to their freedom.

It is interesting to note that the leading article in the current *Lancet* queries whether the ownership of goodwill is really a vital principle. The figures I have quoted cover "the main issue" as explained by the *B.M.J.* leading article. Will I enter the new Health Service in July, 1948? You bet I will!—I am, etc.,

Machynlleth, Mont. DAN E. DAVIES.

SIR,—In reference to the late discussions with the Minister, it is quite evident that he will give way on nothing of fundamental importance unless he be forced to, and that if we are foolish enough to "walk into his parlour" when he asks us we shall become medical servants under a totalitarian central authority and be lost, body and soul, as far as freedom is concerned and be obliged to bow the knee to whatever that authority likes to order—*or else!*

The burning question now is, What are we to do? We are to have another plebiscite. May I suggest that the questionary be couched in the simplest and most unequivocal form possible, such as the following: "Do you wish to serve under the new Act as it is? If not, are you willing to refuse to do so if a percentage of doctors, sufficient to enable the B.M.A. to deliver an ultimatum of refusal to the Minister, also agrees to do so?"—for I am convinced that, unless the B.M.A. be armed with a sufficient percentage of Noes or, better, a sufficient number of names, and be authorized to present them to the Minister and so force him to amend the Act, we might as well cave in at once. If nothing effective like this can be done I think it almost certain that a large number of general practitioners, loath as they are to join the Service, will, when presented individually by the Minister with a demand for decision and not knowing what the other fellows are going to do, not feel themselves able to refuse to join the Service, simply from fear of subsequent starvation.—I am, etc.,

Thame, Oxon. C. H. BARBER.

SIR,—It is only natural that many practitioners, especially those younger men with heavy financial commitments, should feel anxious regarding their position did the profession decide against accepting service under the new health scheme. I am confident that the B.M.A. has not overlooked such a contingency, but a definite promise that they would be able to survive would help them materially in coming to a decision. They would also feel happier in refusing service could they be assured that the Englishman's word would still be his bond.—I am, etc.,

St. Columb, Cornwall. G. MELCHOIR TORRANCE.

SIR,—After reading Sections 35 and 36 and the negotiations and counsel's comments thereon one comes to the conclusion that whoever drafted these Sections—and others in the Act—must have been suffering from a brain storm or similar kind of mental derangement. There is only one logical way of dealing with the purchase of practices by the State—buy *all* practices at the same time at similar terms and tell us when we are negotiating what price we get—for example, 1, 1½, or 2 years' purchase on the last 3 or 5 years' gross receipts. The 1939 values are useless owing to the advance in fees we have been forced to make to compensate for the increased costs of living and running a practice. So far as partnership agreements are concerned the Act should contain a clause rendering these void on day of purchase, and each partner would get a share of the price received for the partnership according to his share of the practice. In the case of one partner not joining the Service his share of the partnership would not be purchased and he would automatically become a private practitioner and be free from the partnership.

We were given to understand that the new Health Service was to be an advance step, but the Act as it now stands is in every way the reverse. Group practice is definitely discouraged when it ought to be encouraged. There is no provision for encouragement of post-graduate study or taking higher degrees. Holidays and reasonable hours of work are not in the picture, in spite of the fact that these would give practitioners a reasonable chance to keep fit so as to do better work. The only object of the whole Act is to place the medical profession under the thumb of the Minister of Health and finally to turn us into puppets to dance to any tune he cares to play.

The capitation fee proposed is far too small, and any figure under 25s. per head should be definitely refused. As the Act stands at the moment it will only encourage a mad rush to get as many patients on to each panel, by fair means or foul, and then to do as little work as possible for them.

There have been several schemes devised in the past for a service which would be a great advance on our present system. Let us cease trying to negotiate with the present Minister, who evidently does not understand what negotiating means, and turn down the Act completely. Then let the profession get down to the job of providing a really up-to-date and workable scheme and offer to put it into practice. We have the power to do this now. Let us at last show a united front.—I am, etc.,

Wetherby, Yorks. S. T. PYBUS.

Payment of Hospital Staff

SIR,—At a meeting of the Marylebone Division of the B.M.A. held on Dec. 30 to consider the attitude of the profession to the National Health Service one of the speakers criticized the medical staffs of several of the London teaching hospitals for accepting payment for their hospital services. University College Hospital was one of those named, and the implication offered by the speaker seemed to be that the medical staff had as a body thereby declared their intention to accept service under the N.H.S. irrespective of the result of the plebiscite shortly to be held by the B.M.A.

This implication, if intended, has no substance. The facts are that the governing body of the hospital made an offer to the individual members of the part-time honorary medical staff of a payment for their hospital services during the year 1947.

Some accepted and some declined. Those who accepted doubtless had in mind the advice given in the joint letter from the B.H.A. and B.M.A. dated Aug. 9, 1947. This payment was offered entirely without prejudice to the future of the staff under the N.H.S., and neither the acceptance nor the refusal of that payment carried with it any obligation on the individual, declared or implied, either to accept or to refuse service under the N.H.S. in July next.—I am, etc.,

S. COCHRANE SHANKS,
Dean, University College Hospital Medical School.

The Coming Plebiscite

SIR,—The plebiscite form will soon be in our hands and our answer will determine the future of medicine. One point that is giving concern to those who have in mind to say "No" is the question of support if a sufficient majority of the profession should be of that mind. Could a clause be inserted in the plebiscite form asking if those who will vote "Yes" are prepared to give an undertaking that in the event of their being in the minority they will loyally support their "No" brethren, so that there will be no question should the vote go to the "Yes" side the others will conform.—I am, etc.,

Mumbles, Swansea. J. BURGESS JAMES.

SIR,—Now that the results of negotiations with the Minister of Health are made known to us, we the doctors are to be asked again to vote "Yes" or "No" to the Health Act. Since the Minister has again refused point blank to amend this Act in any particular, there is nothing new to vote on. Why, then, are we asked to vote again? Is it because it is hoped that since the last plebiscite we have lowered our standards? Otherwise there is no point in having another plebiscite.—I am, etc.,

Leigh-on-Sea, Essex. A. H. LEVERS.

Remuneration in N.H.S.

SIR,—It is probable that only a very small minority of general practitioners favour a salary, even a basic one, but there must be a considerable number who hesitate to refuse because of their own limited resources. Could not the B.M.A. publish a scheme, at least in outline, designed to meet their difficulties? That this would be worth while is illustrated by the experience of a young doctor who wrote to the B.M.A. for advice. He was referred to a commercial house, whose terms proved to be as follows: Interest should be at 4%; he should take out a life insurance, and he should repay the capital at 12% per annum—£30 per quarter on £1,000—in ten years. So for £1,000 he would have to pay £1,200 spread over only ten years, as well as 4% interest and a life insurance premium. Obviously such terms could not compete with the offer of the Minister.

It has been suggested that to a man of good character and sound health the B.M.A. might lend or guarantee a suitable sum of money free of interest for a limited period, repayment of capital to begin at the end of that period at a rate varying with individual circumstances.

With respect to the plebiscite, it seems probable that very useful information could be obtained by taking account of district voting. It is likely that a larger number of districts would be for or against acceptance than would appear from the mass voting. A significant difference, especially if generally the majorities in those districts were large, surely would be very important.—I am, etc.,

Beckenham, Kent. W. MAXWELL PENNY.

General Practitioners and the Basic Salary

SIR,—May I be permitted to ask what percentage of general practitioners in active practice has "a strongly rooted objection to a basic salary"? Who gave the Negotiating Committee the authority to say this and is the statement true? If the profession has this strongly rooted objection, how can the payment of a capitation fee of 15s. 2d. to 18s. possibly recompense him for the loss of private fees? Is it reasonable to suppose that a private fee-paying patient who can retain the services of the same practitioner will continue to pay private fees and a State contribution as well?

It may seem fantastic, but no one is going to pay any more than is necessary if it can be avoided; and who will pay £1 1s. if the same service can be obtained from the same source for 5s. or less, even if it can be well afforded? Therefore, so far as I can see, private patients will soon be converted to so-called "public patients." Neither a £300 basic salary nor a capitation fee of 18s. (or less) can possibly compensate for the loss, which is inevitable. The result, so far as I can see, will be that in the smaller and more especially rural practices, where I should say two-thirds of the annual income is derived from private fees, a financial catastrophe faces the practitioner. I could give figures to prove my statement and I expect many more could do so as well.—I am, etc.,

Callander, Perthshire. F. C. M. MCILWRICK.

*** In para. 34 of the Negotiating Committee's document (*Supplement*, Dec. 20, 1947, p. 146) the Committee advocates remuneration by capitation payment and states its opposition to payment by a salary, basic or other. This is in accordance with the first of the "Principles of the Profession" enunciated by the Negotiating Committee and published in the *Journal* of March 30, 1946 (p. 468). The members of the Negotiating Committee were elected by the B.M.A., the Royal Colleges, the Royal Scottish Medical Corporations, the Society of Medical Officers of Health, the Medical Women's Federation, and the Society of Apothecaries, and represent their views. At the Special Representative Meeting held on May 1 and 2, 1946 (*Supplement*, May 11, 1946, p. 126), the motion declaring for capitation fee and against salary or part salary was carried by 209 votes to 8.—ED., *B.M.J.*

Representation on the Negotiating Committee

SIR,—In your leading article (Dec. 20, 1947, p. 1002) you state that "the Negotiating Committee, it is well to point out, is representative of all phases of professional life." May I point out that this is not quite correct, since a small but not insignificant group has not, to my knowledge, been represented on the Negotiating Committee. I refer to the medically qualified preclinical teachers, whose case appears not to have received consideration and is therefore likely to go by default. It is not too late to rectify the omission by adding to the Negotiating Committee a representative of this group.—I am, etc.,

Department of Anatomy, The University, Bristol. J. M. YOFFEY.

Leakage

SIR,—I wonder if any member of Council or of our discussions committee has read an article on p. 5 of the *Tribune* of Dec. 12? It is headed "Bevan and the Doctors," and to say that I was shocked when it was brought to my notice by a colleague is to put it mildly. It viciously attacks the B.M.A. and the Negotiating Committee (*sic*), says that if they ever hoped to gain concessions or admendments to the Act or postponement of the appointed day they must now be bitterly disappointed, and then goes on *to enumerate nearly every point* in the Minister's reply to our case. It exults in his refusal to concede one iota, in his determination to bring in the Service on the appointed day with "the means at his disposal," and particularly in his absolute refusal to give in over direction of doctors or on the matter of the sale and purchase of practices. It says that the B.M.A. has become the instrument of Conservative policy, but that it will not succeed in preventing the establishment of a *Socialist* medical service. It then goes on to suggest that any hope that the B.M.A. has of persuading doctors to refuse to enter the Service will fall to the ground when the enticing financial terms—basic salary, plus a capitation fee of "not less than" 17s. 6d. and "generous" compensation—are circulated within a few days to every doctor in the country.

At the Panel Conference in October I had occasion to say that I felt that the seven months of "discussions" (what an irony!) had been a period of phoney peace during which our wily opponent had had leisure to perfect his plans for a blitzkrieg, and this unsavoury *Tribune* business has confirmed me in that opinion.

Surely, then, the time has now arrived for all medical members of executive councils, regional boards, *et hoc genus omne* to resign; and I should like to suggest that this be done nationally on a set day, and that at the same time it be arranged

for insurance practitioners to put in notices of resignation from the N.H.I. service and for members of National Service and Ministry of Pensions Medical Boards to do likewise. This would serve to show this dictator-minded Minister that we are by no means disposed to walk into his parlour or to succumb to his ruthless threat of force, and that we at last realize that we can place no trust whatever in his word. Having marked our disapproval in this unmistakable fashion, we could then settle down with quieter minds to hold our plebiscite, and to get ready for the inevitable conflict.—I am, etc.,

Wolverhampton. A. VICTOR RUSSELL.

Sulphamerazine Treatment of Pneumonia in Adults

SIR,—The results obtained by Drs. H. Joules and S. D. V. Weller (*Journal*, Dec. 13, 1947, p. 947) are interesting, but we are told little about the type of pneumonia. Radiological details and detailed leucocyte counts are not given, and apparently the pneumococcus was isolated in only 53 cases—28% of the total series. There is no mention of blood cultures in the severe cases. The satisfactory response with such small doses of sulphamerazine would appear to be due in part to the mildness of many of the infections.

Sulphamerazine's easy absorption and slow excretion are noted, but no mention is made of the fact that in the blood 80% is bound to the globulin fraction of the plasma—i.e., only 20% of the blood sulphamerazine is available for antibacterial action (Heffner, 1945). Hence the importance of moderately large doses of the order of 30 g. over 4 to 5 days in order to maintain, as Genecin *et al.* (1945) have found, blood levels of 12 to 16 mg. per 100 ml. In a small personal series of 68 African patients suffering from lobar pneumonia treated with this drug (Johnston, 1947) the advisability of this latter dosage was confirmed. Sulphamerazine is a valuable drug in the treatment of pneumonia, but it should be given in adequate doses, bearing in mind also the recent warning limitations concerning penicillin.—I am, etc.,

Aberdeen. R. N. JOHNSTON.

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SIR,—The article by Drs. Horace Joules and S. D. V. Weller on the sulphamerazine treatment of pneumonia in adults (Dec. 13, 1947, p. 947) attracted my particular interest this week, as we have under treatment at the present moment our second case of anuria in a male, due to obstruction of the lower end of both ureters by concretions of sulphamerazine crystals.

I had in mind to publish full clinical details of these two cases at a later date when full recovery has occurred. It seems timely enough, however, to bring to the notice of your readers that sulphamerazine is capable of producing anuria even when used in reasonable doses, for in both cases to be reported the patients had no more than 1 g. four-hourly for less than a week. This is more than advised by Drs. Joules and Weller, but nevertheless not excessive. Both patients were instructed to take large quantities of fluid, but were not given alkalis. Fortunately, the obstruction was quite easily overcome by ureteric catheterization and lavage with a 5% solution of sodium bicarbonate.

Sulphamerazine is used far less commonly than sulphamezathine, yet so far in our district we have no knowledge of calculosis having occurred from sulphamezathine, and it would appear, therefore, that if the therapeutic effects of the latter compound are as good as those of sulphamerazine the British drug is the safer of the two.—I am, etc.,

Chelmsford, Essex. M. D. SHEPPARD.

Penicillin in Scarlet Fever

SIR,—Your annotation on penicillin in scarlet fever (Dec. 6, 1947, p. 915) is based solely on the work of Meads *et al.* (1945) and Jennings and de Lamater (1947) and ignores every publication by British workers and many important American papers. The penicillin treatment of infections of the oral cavity and upper respiratory tract has followed a logical sequence since Garrod (1944) stressed the sensitivity of a wide range of mouth organisms. The role of penicillin applied locally to the mouth has been investigated by numerous workers. MacGregor and Long (1944) indicated the probable value and limitations of penicillin pastilles in acute and chronic streptococcal tonsillitis. Mowlem (1944) drew attention to the extraneous organisms that invade the mouth during penicillin treatment.

Vollum and Wilson (1945) and MacGregor and Long (1945) discussed the method of spread of drugs in the oral cavity. Symons (1945, 1946), Archer (1945), Dodds (1946), Christie and Preston (1946), Long (1946a, b; 1947a) in this country, and Karelitz *et al.* (1947) in America, have discussed the role of penicillin in the treatment of diphtheria and have provided much information on the effect of the drug on secondary infection. Long (1946a, b; 1947a, b) has compared the effects of local and systemic penicillin on the flora of the mouth and upper respiratory tract and has suggested the need for a dosage of 1,000,000 units a day for three days. Rantz *et al.* (1947) noted that "post-streptococcal disorders were not observed in a small group of patients who received 500,000 to 1,000,000 units of penicillin in 80 hours."

I suggest that to exclude all reference to these publications is to detract from the value of your contribution. For instance, the statement that "the three risks of scarlet fever, then, are the primary toxaemia, the early endogenous invasion, and the late exogenous reinfection, and no one treatment is likely to combat all three" is not compatible with published information on the subject. It would seem to me that if the pathogens can be eliminated in a matter of hours in the early stages of the disease the toxaemia will be halted, local spread prevented, and the patient will be rendered non-infectious.

The work of Jennings and de Lamater from which your contributor obtains most of his information indicated quite clearly that, in spite of a dosage of 400,000 units daily, pathogens were not eliminated from the throat, and complications due to local spread of infection occurred. The obvious conclusion is that this dosage was too small. Since it would be insufficient to remove the highly penicillin-sensitive organisms from the gum pockets it could scarcely be expected to remove the more resistant streptococci from the tonsillar crypts, while the risk of rendering organisms penicillin-resistant by under-treatment cannot be ignored.

It would be unwise to predict the future of penicillin in the treatment of scarlet fever, diphtheria, acute haemolytic streptococcal tonsillitis, and the associated carrier states (for they are one problem, not many). It is probable that when we know what dosage of penicillin will eliminate all pathogens from the oral cavity and upper respiratory tract in the minimum time, and if we can show that in the case of infections associated with toxaemia the level of antitoxin reaches a lower titre in the blood of those treated with penicillin than in a control group receiving no penicillin, we will be on the way towards the solution of our problem.—I am, etc.,

London, W.C.1. DAVID A. LONG.

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Diet and the Nation's Health

SIR,—It is surely time we had some hard facts about the nutritional position to-day, instead of the flood of opinion—usually pessimistic and more or less uninformed, misinformed, or merely malicious—which is obtaining headlines in the public press, and even finds a platform in your own columns.

The speakers for the motion at the recent Hunterian Society debate were doubtless convinced of the worth of their opinions, but, if your report (Nov. 29, 1947, p. 882) is substantially correct, Sir Jack Drummond spoke nothing less than the truth when he claimed that "no concrete facts had been brought forward to support the view that there had been deterioration

of health as a result of diet." Dr. F. M. R. Walshe's scathing retort (Dec. 13, 1947, p. 971) does nothing to persuade me otherwise; for even a "clinical opinion" should be based on relevant fact.

Dr. G. T. Mills's letter (Dec. 6, 1947, p. 926) has a spurious air of objectivity. Since anyone can calculate the food value of rationed foods and make a reasonable estimate for points foods, his figures for these items may be accepted at their face value. But on what basis was his list of unrationed foods compiled? Either he conjured up these foods and their quantities out of an unspecified "general experience"—always a hazardous, and in this case unjustifiable, procedure—or he based them on actual observation of definite "cases" by a definite method. If the latter I should like to know how he selected his cases and what his technique was. Without this information, I am entitled to assert that his figures prove absolutely nothing. Incidentally, Dr. Mills compares a presumptive total home diet for an adult consumer receiving no priority foods with the reputed consumption per head of the whole population—including women and children as well as the men, heavy workers as well as sedentary workers, invalids as well as the healthy, and so on. Where this peculiar comparison is meant to lead is by no means clear.

Dr. J. G. Bennett (Dec. 20, 1947, p. 1012) says that mothers nowadays "are unable to suckle their own progeny for more than a week or two" owing to underfeeding. If he means *some* mothers, then his statement has probably always been true. At the moment something like 40% of mothers in this part of the country completely breast-feed their babies, and I know of no evidence that this is a worse performance than obtained, say, three or ten years ago. There is no doubt, also, that many of the lactation failures are due to causes other than undernutrition. If Dr. Bennett means *all* mothers in his practice, or if he believes that there has been an appreciable deterioration in recent years, then it is most important that he should report his facts carefully and temperately, in accordance with scientific usage.

I have been at pains to search for factual reports of diets actually consumed during the past few years. The number of published diet surveys can be counted on the fingers of one hand. I know the Ministry of Food carries out surveys routinely, but its reports are not published, and hence official figures cannot be judged in their full context. Why the secrecy? On the clinical side, there is a similar scarcity of published research, except in respect of school-children. Whether or not the country has recently become seriously undernourished, there is certainly a great need for facts, publicly presented in a scientific manner. Does the M.R.C. not think so? One wonders what facts the new B.M.A. Nutrition Committee is going to deal with.

It may not be entirely incorrect to suppose that much of the publicity given to many wild and unsupported opinions of certain medical men and politicians is based on a sincere belief that the present Government is pursuing a misguided policy. Governments, after all, are fair game for critics. But surely the best medical policy would be to deal in facts which speak for themselves, and not to parade half-truths disguised as learning, or violent opinion in the guise of authority? Although medicine is not altogether an exact science, we are generally credited with being a scientific profession, and I am optimist enough to believe that the scientific method pays, even in politics.—I am, etc.,

Foresterhill, Aberdeen. ANGUS M. THOMSON.

Streptomycin and Tuberculous Meningitis

SIR,—It was interesting to read in the *Journal* of Dec. 6, 1947 (p. 897), the account of streptomycin in the treatment of tuberculous meningitis in children by physicians of the Hôpital des Enfants in Paris. Their experiences in technique and dosages will no doubt be of the greatest value to many who are now entrusted with the care of patients suffering from what has been one of the most fatal forms of tuberculous disease. It has recently been my good fortune to observe a series of over 100 cases of tuberculous meningitis and miliary tuberculosis treated with streptomycin, dextrose sodium sulphonate, and vitamin A in the Hospital Meyer in Florence by Prof. Cocchi and his associates, and one can confirm the excellent results which have been claimed by these workers. The technique used in Florence and in other centres, however, varies considerably from that described by Debré and his co-workers in Paris. Indeed, techniques and dosages have still to be studied in much greater detail before final pronouncement can be made on the real value of the drug.

It may be of interest to your readers, therefore, to know that the Interim Commission of the World Health Organization, realizing the importance of the subject, decided at its Fourth Session in Geneva in August, 1947, to call a meeting of a number of international experts who have had practical experience in the use of streptomycin with a view to correlating results so far obtained and, if possible, to make available the most recent data concerning methods of treatment. Evidence from a number of countries points to the need for such guidance as may be forthcoming from such a group of experts. It is anticipated that the Expert Committee of the World Health Organization Interim Commission, which meets in Geneva in February, 1948, will be able to complete the arrangements for this conference so that it may be held not later than April, 1948.—I am, etc.,

World Health Organization. J. B. MCDOUGALL.

Diet and Peptic Ulcer

SIR,—Alkalis and atropine relieve symptoms, but ulcer is a deficiency disease. This is indicated by its historical rise, and by its class distribution up to the war, when rationing put us all on a more just level. Ask any senior surgeon how many "perfs." he used to deal with in his West End practice. Experimentally it was proved long ago by McCarrison's rats, fed on Travancore coolie diet; the findings of Sommerville and others in India are in support; also the recent work of Illingworth in Glasgow, when the incidence in slump-fed workers rose to a peak as soon as war work imposed its added strain. Of course there are other factors, notably strain: we are dealing with men and women, not test-tubes.

Clinically, anyone may convince himself (and cut down his wait'ng-list) by forgetting all he once learnt about "bland" diet, which means unsupported starch for most people, and feeding his ulcer cases on milk (no matter what anybody says) and a robust whole-cereal diet. If his courage fails him, he should remember that hibernating animals swallow a chunk of wood or something similar to keep the stomach in good tone during the winter fast. In default of a reliable whole-meal bread, and especially in parts where oatmeal porridge is not popular, some preparation of whole wheat germ gives rapid results in healing and freedom from relapse. The coincident spasticity of the colon also disappears. Only the long-standing indurated cases should come to the operating table.—I am, etc.,

Edinburgh. A. G. BADENOCH.

Antral Infection in Children

SIR,—Mr. F. M. Walker (Dec. 6, 1947, p. 908) draws attention to the frequency of antral infection in children with unhealthy tonsils and adenoids. He states that a considerable proportion of the cases which were referred for tonsillectomy had failed to benefit thereby. 1,779 children, from a child population of 70,000, were operated upon by him during the year 1946.

The school population of Cornwall is about 36,000, and in 1946 about 325 operations for removal of tonsils and adenoids were carried out under the county council scheme, of which number we were responsible for 226. We find that the parents of these children are nearly always delighted with their improvement following operation. All the children are seen by one of us on at least one occasion, in the presence of a parent, before operative treatment is advised. They are seen again three months after operation. In many instances their tonsils and adenoids are not removed until the child has been under observation at out-patient clinics for six to twelve months.

The absolute indications for operation are considered to be (1) Recurring attacks of tonsillitis; (2) persistent enlargement of the tonsils and adenoids sufficient to cause mechanical obstruction. Among resulting symptoms are snoring, difficulty in eating, repeated attacks of earache or deafness, and inability to throw off head colds.

Children are often referred for advice because they catch frequent colds, which, on questioning, are found to clear in a few days. Others are referred because they have nasal obstruction or catarrh which is found to be due to chronic sinusitis or rhinitis, often with a history of allergy or a deflected nasal septum. Removal of these children's tonsils and adenoids will of course lead to disappointment. We also find signs of antral

infection in a number of children selected for operation. As Mr. Walker suggests in his final comments, this resolves in the vast majority of cases after removal of the diseased tonsils and adenoids. He considers that the unsatisfactory results following tonsillectomy and adenoidectomy are due to sinusitis : we consider that they are more likely to be due to an incorrect selection of children for operation.—We are, etc.,

M. R. SHERIDAN.
T. M. BANHAM.

Truro, Cornwall.

Residual Prostatitis

SIR,—We have read with great interest Dr. F. C. Bourgault Du Coudray's excellent article on residual prostatitis (Oct. 25, 1947, p. 651). Such a condition has been observed by us in a large number of cases, and assuredly also by many others, after sulphonamide or penicillin treatment of the urethral-process gonorrhoea. Some cases were treated for months and even years with massage, diathermy, and high supplementary doses of antibiotics notwithstanding the fact that repeated cultures of prostatic fluid and of semen were sterile or showed some diphtheroids or Gram-positive cocci or bacilli. Streptomycin was used without success in 2 cases.

The persistence of pus cells in the prostatic fluid indicated the existence of an infection whose true nature we have cleared up in quite a few cases after dark-field observation of the prostatic fluid. In a recent communication to the III Pan-American Congress of Urology (Rio de Janeiro, Sept. 14–20, 1947) we referred to 50 cases of such a type of prostatitis observed in V.D. clinic patients ; in 6 (12%) we found spirilla, some morphologically similar to *Sp. dentium*. Latterly we have found in 7 other cases spirilla, in 3 *Tr. vaginalis*, and in 2 an association of both these micro-organisms. All cases were cured rapidly with arsenical therapy—trivalent, pentavalent, or arsenoxide.

In 3 out of 10 cases in which we did not find spirochaetes or protozoa we obtained rapid and remarkable results with the arsenical therapy, based on the knowledge that the former micro-organisms may disappear, breaking up into coccoid or granular forms (Dutton, Leishman, Balfour, Nicolle, Coutts, Marchoux, Chorine, etc.).

As regards the negative action of penicillin in cases where spirochaetes have been found, it is of convenience to remark that this drug does not act equally on the different types and that even *Sp. pallida* sometimes requires very large doses in order to be destroyed.

When prostatic fluid contains numerous pus cells we dilute it with tepid normal saline and examine a drop of the dilution. An excess of pus cells impedes the free movements of spirochaetes and of the cilia of trichomonads, rendering their search almost impossible. Following this practice we have frequently been able to demonstrate the presence of these micro-organisms in fluids that had been declared sterile.—We are, etc.,

WALDEMAR E. COUTTS.
EDNA SILVA-INZUNZA.

Santiago de Chile.

Cheaper Heparin

SIR,—Recent correspondence on heparin and dicoumarol prompts me to write on the subject of these anticoagulant drugs. Whatever may be the views held by physicians on the value of anticoagulants in the treatment of coronary thrombosis, surgeons should be in no doubt about the value of anticoagulant therapy, properly managed, in cases of post-operative venous thrombosis and embolism. In view of this fact, it is perhaps surprising that these drugs are not more widely used.

There would seem to be two reasons for the present state of affairs: on the one hand we have heparin, a highly effective, safe, and expensive drug, while on the other hand there is dicoumarol, a cheap, potentially dangerous, but more readily obtainable drug. Experience with dicoumarol seems to vary greatly, and, although one knows some who have used it without experiencing any trouble, there are many who report serious and even fatal complications following its use. While it is clear that the most careful laboratory control is essential in dicoumarol therapy, it is doubtful whether a substance which has been described by no less an authority than Jorpes as exerting "a kind of toxic narcosis of the liver cells, the depth of which it is difficult to control," is really the drug of choice in the treatment of thrombosis.

At the present time an average day's treatment with heparin costs more than five pounds, whereas that with dicoumarol may cost less than a shilling. Under these circumstances it is hardly surprising that dicoumarol is sometimes tried (often, it is true, under inadequate laboratory control), found wanting, and discarded, while heparin, being expensive and in short supply, is used far too little.

Since the great value of heparin should need no emphasis I would like, through your columns, to put in a strong plea for the manufacture of a plentiful, cheap, and reliable brand of heparin. Doubtless other readers will be ready to express their views and, if necessary, to encourage the commercial drug firms to satisfy our needs.—I am, etc.,

REGINALD S. MURLEY.

Radlett, Herts.

Drug Addiction

SIR,—I was interested in your annotation on drug addiction (Dec. 13, 1947, p. 965). The group of opium eaters who appear to be in an "arrested development" stage of addiction must be familiar to medical officers who served with Indian troops in the recent war. It was found that Indian troops, who were able to obtain supplies of opium in India quite easily, presented a problem when posted out of India to countries where opium was not so readily obtainable. At first opium eaters were posted back to India, but later policy was changed, and these men were supplied with a limited amount of crude opium up to a maximum of 300 gr. (20 g.) per month.

In my unit half a dozen men were kept efficient and healthy with such a maintenance dose. Some received 200 gr. (13 g.), the others the full 300 gr. monthly. I followed these men over a period of 2½ years and found that their work was satisfactory in every way ; they did not make frequent appearances at sick parade nor did they seek increasing doses of opium to remain in such equilibrium. I made attempts to break them of the habit, but since they were men over 30 with a history of ten years or more of taking the drug success was neither anticipated nor achieved.

On the other hand, a dozen or more young soldiers posted to the unit direct from India were broken of the habit quite easily by immediate withdrawal of the drug. This group suffered virtually no withdrawal symptoms and emphasizes the point brought out by your annotation—that it is a mistake to apply the term "drug addiction" to all cases in which drugs are taken merely to produce euphoria.—I am etc.,

PHILIP JACOBS.

Bristol.

Child-bearing and Tuberculosis

SIR,—Dr. C. J. Stewart and Dr. F. A. H. Simmonds (Nov. 8, 1947, p. 726) have noted that the majority of physicians who have recent experience in the matter agree that pregnancy does not activate tuberculous disease ; they have confirmed this themselves by a statistical analysis of a large series of patients, and they have drawn the conclusion that abortion is not a therapeutic agent in tuberculosis. Their comment in your issue of Dec. 27, 1947 (p. 1056), that effective advice concerning birth control had not been given to the patients in their series, and their suggestion that such advice is advisable especially for two years after the disease has become quiescent, is less logical, because they have already shown that in spite of lack of such advice, and also the lack of therapeutic abortion, the patients with active disease in their series who were pregnant compared not unfavourably in results with a control group with active disease who were not pregnant. Dr. R. C. Cohen found in his analysis of the Black Notley cases that a woman who became pregnant soon after quiescence of the disease would as likely do well as a woman who became pregnant later.

Admittedly, unlimited pregnancies should not be encouraged in tuberculous women. But the psychosomatic background of tuberculous disease is becoming increasingly perceptible. Conjugal felicity is important for a tuberculous woman, as for others, and if by effective birth control is meant artificial contraception it is interesting to speculate whether our generation, to whom advice in artificial contraception has not been wanting, is the more blessed in happy marriages. Might it not rather be better for the tuberculous woman and her husband to avoid a facile solution and by mutual co-operation and sacrifice to grow in that mutual respect on which happy marriages are built ?

Another point is that I have followed up a number of patients who have suffered from non-pulmonary tuberculosis and who later married, and have found that pregnancies were unusual among them. This difference between patients with phthisis and patients with other forms of tuberculosis offers an interesting commentary on the pathogenesis of the disease.—I am, etc.,

Black Notley, Essex. M. C. WILKINSON.

A Method of Abdominal Palpation

SIR,—The method of abdominal palpation described by Dr. E. W. Price (Nov. 1, 1947, p. 703) is, no doubt, almost the inevitable one when there is no table or chair available and when a number of patients are to be examined. But at a crowded out-patients of an Indian mofussil dispensary, where just a stool and a chair can be improvised, I have found a modification of the method more useful. The patient is seated on a stool on the examiner's right side, facing him and the light. The abdominal palpation is done in the same way as described by Dr. Price, with the patient bending forward. The sitting position of the patient is superior to the standing one for abdominal palpation, as it ensures a more complete relaxation of the abdominal muscles, because the thighs are flexed at right angles to the trunk.—I am, etc.,

Poona City, India. P. L. DESHMUKH.

Prickly Heat: A Simple Remedy

SIR,—Recent references in the *Journal* to prickly heat (Nov. 15, 1947, p. 779; Dec. 20, 1947, p. 1012) make me wonder once again how many of those who interest themselves in this complaint have tried treating it with perchloride of mercury lotion. If a solution of perchloride of mercury in water, 1 in 500, is dabbed twice daily over the affected area and allowed to dry on the skin, the trouble is finished, in my experience, within two or three days, and further occasional applications prevent its return. This simple treatment was told me many years ago by a colleague in the Colonial Medical Service: I have never seen it mentioned in print, and have never known it fail in practice.—I am, etc.,

Nairobi, Kenya. C. J. WILSON.

Relief from Pain in Obstetrics

SIR,—May I, as a woman practitioner, support Dr. John Elam's timely plea (Dec. 27, 1947, p. 1055) for the relief of pain in obstetrics? I have just returned from a most heartening visit to a maternity home in the South of England where "trilene" and air, and gas and air, are available and efficiently administered to all women in labour who desire anaesthesia. What impressed me, however, was not the number of women who made use of this opportunity, but the far greater number who enjoyed—literally enjoyed—bearing their babies without any anaesthetic, drug, or hypnosis.

If anaesthesia is the only way whereby the pain in labour can be relieved, by all means let us have adequate facilities for its effective administration. But if the pain of labour can not merely be relieved but virtually prevented by perfectly simple, straightforward physiological methods, why not employ these, rather than in ignorance allow a "normal" labour to progress in such a manner that anaesthesia, with its accompanying dangers (however small), becomes necessary?

Having read G. Dick Read's *Revelation of Childbirth*, and taken the opportunity of verifying with my own eyes the practical results of the application of his theories, I am convinced beyond any shadow of doubt that the answer to the "scandal of the 'woman in pain'" lies, not in the reduction of pain "to a minimum" by anaesthesia, as Dr. Elam humanely suggests, but in its prevention by education. That such a revolution in the conduct of labour is possible there can be no doubt in the minds of those of us who have been privileged to experience over and over again the peacefulness of a really normal labour, and witness the healthy joy of a mother when, after such a labour, she reaps her reward in full consciousness of her achievement.

Doctors and midwives in many parts of the country to-day are practising, or learning to practise, the methods whereby such results are made possible. But until the principles and practice of Dr. Dick Read's great work become part of the curriculum in *all* medical schools and midwifery training centres instead of, as at present, in an isolated and enlightened few, there will be many who, with me, deplore the grave and tragic injustice that is now being done to the mothers of this country and to humanity in general. For what is callousness, or indifference, to extreme suffering but a natural protective reaction towards the acceptance of its inevitability?—I am, etc.,

York. MAHLO J. ELLIS.

Asthma and the Inhaler

SIR,—Dr. James Kay (Dec. 20, 1947, p. 1011) describes the effectiveness of an inhaler in relieving an attack of bronchial asthma. It is true that the method is simple to use and rapid in its effect, and this makes it particularly important that the contraindications to its employment should be recognized. The fluids employed in asthma inhalers usually consist of solutions of vasoconstrictor and antispasmodic drugs such as adrenaline, pituitary extracts, atropine, and papaverine, and the effect of these vaporized solutions on the congested bronchial mucous membrane is to produce a rapid vasoconstriction and paralysis of the cilia. The asthma is relieved by the shrinking of the previously swollen bronchial mucosa, and provided the inhalation is not repeated day after day no harm results. But if an inhaler is used several times daily for weeks or perhaps months at a time the cilia of the bronchial tree become destroyed and the bronchial mucosa becomes thickened. The result of this is that expectoration becomes more difficult, shortness of breath on exertion more pronounced, and the attacks of dyspnoea recur more frequently. These symptoms do not occur as a result of repeated adrenaline injections.

In general the higher the adrenaline concentration in the inhalant solution the more rapid is the relief obtained and the quicker is the bronchial mucosa damaged. There is also a risk of adrenaline poisoning when a strength of 1 in 100 is repeatedly inhaled (*Journal*, 1946, **1**, 671), and I reported such a case (*Journal*, 1946, **1**, 864). Ephedrine is less harmful as an inhalant than is adrenaline, and the suggested prescription of 1% cocaine and 1% ephedrine in 4% glucose saline (*Journal*, 1946, **1**, 671) is preferable to the inhalant solutions usually employed.

It may sometimes be necessary to prescribe an inhaler for patients whose attacks are so severe that relief is not obtained by the usual oral remedies, and when, in addition, adrenaline injections are not practicable; but these patients must be warned of the risks of continued use.

Rhinologists know that spraying the nose with adrenaline produces rapid temporary relief to nasal obstruction by shrinking the nasal mucosa, and that this relief is followed by increasing obstruction. No rhinologist therefore would prescribe an adrenaline nasal spray for constant use. The employment of an inhaler is equally undesirable in chronic asthma.—I am, etc.,

London, W.1. CLEMENT FRANCIS.

Foreign Body in the Vagina

SIR,—Apropos the letter from Dr. G. J. Grainger (Dec. 20, 1947, p. 1011) I can quote a case which I think is worthy of a place alongside the one he describes. I had been attending an old lady of over 80 for a considerable time, when, in November, 1942, she began to complain of a feeling that her insides were falling out. When I came to examine her I found that the perineum simply did not exist. On making a vaginal examination my finger encountered a foreign body which on withdrawal proved to be a dried-up twisted old ring pessary. There were no ulceration and no bleeding. On going into the history more thoroughly the patient was very vague but maintained against all attempts to dissuade her that the ring must have been *in situ* for 41 years.

Perhaps the most interesting feature of this case lies in the subsequent history. I continued to see her at regular monthly intervals. Her only complaint was of dizziness due to a raised blood pressure. In February, 1946, she began to complain of abdominal discomfort accompanied by attacks of diarrhoea. On examination I found her belly to be distended. A rectal examination revealed a hard mass invading the lumen of the

rectum about 3 in. (7.6 cm.) from the anal orifice. This was producing almost complete obstruction. Operation was firmly refused and she died on March 17, 1946. It is tempting to relate the final condition to the ring episode. Unfortunately no post-mortem examination was allowed, so no pathological evidence exists. Certainly I had at the time no doubt that clinically the growth was a carcinoma.—I am, etc.,

Bridlington, Yorks. C. J. GORDON TAYLOR.

SIR,—I was interested to read (Dec. 20, 1947, p. 1011) about Dr. G. J. Grainger's finding a bone nozzle in the vagina. While I agree that it was remarkable that it should be impacted in the pessary, I do not feel that it should be expected to cause any more symptoms than the pessary itself. Surely this is a case of straining at the enema and swallowing the pessary. Perhaps if it were given the chance the patient's cat would oblige by swallowing them both.—I am, etc.,

London, S.W.12. W. P. M. DAVIDSON.

The Lazy Eye

SIR,—Your recent correspondence on "The Lazy Eye" has drawn attention to the significant number of adults who have subnormal visual acuity in one eye. The figures quoted by Dr. G. C. Dansey-Browning (Nov. 15, p. 796) and Dr. Alan Watson (Dec. 6, p. 933) emphasize the seriousness of the problem. Mr. T. Keith Lyle (Sept. 6, p. 398) stressed the need for treatment at an early age, and surely this is the pointer to the root of the trouble.

The present school ophthalmic service is essentially curative, and until it becomes preventive the incidence of visual defects at school-leaving age will continue to rise. A school child does not receive any ophthalmic treatment until the error becomes manifest to teacher or parent, or a drop in acuity is revealed by a medical examination. The Board of Education's 1931 report "On Problems Connected with Defective Vision in School Children" recognized the need for treatment of ocular defects at the earliest possible moment, before faulty visual habits become established in the children. The committee stated that a regular objective ophthalmic examination of every child was desirable in order that visual defects should receive early treatment, but it doubted if financial and administrative difficulties would permit. Now in 1947, sixteen years later, the position is not changed, and it is obvious that until yearly ophthalmic inspection of every school child is begun, coupled with adequate provision for the visual care of pre-school infants, the number of adults with "lazy eye" and other ocular troubles will continue to increase.—I am, etc.,

Henley-on-Thames. S. BLACK.

Sterilization of Syringes

SIR,—The important question of sterilization of syringes, needles, and specula has been discussed recently in your columns, and we should like to make the following comments on the advice given. You state in "Any Questions?" (Oct. 25, 1947, p. 680) that, in the absence of an autoclave, the best method for sterilizing the above articles is to place them in a dry oven at 150° C. for one hour. This time is inadequate. The Medical Research Council War Memorandum No. 15 states: "Syringes and needles are placed in the oven while it is cold; the time of sterilization is not less than one hour after 160° C. has been reached. The oven should be allowed to cool before the syringes and needles are removed." The M.R.C. Memorandum also advises reliable thermostat and temperature control and control tests with infected material containing spores. These latter precautions are important because when, as is usual, syringes are sterilized in wrapped or plugged test tubes, there is a considerable time lag before the whole of the syringe is actually at the temperature of the oven, and this time lag must be allowed for in the time required for sterilization.

There is a comment by Messrs. John Foster and C. H. le May (Nov. 22, 1947, p. 854) on this question of hot-air sterilization. They quote Hanne[1] in support of their contention that sterilization by means of hot air is an unsatisfactory process. In fact, what Hanne's work emphasizes is the inefficiency of most of the hot-air sterilizing ovens which he tested and the inadequacy of the so-called "sterilization" techniques which were being employed. Hanne's failure to kill *B. mesentericus* under the conditions of his experiments should not be quoted as a condemnation of hot-air sterilization in general. His work does, however, call attention to the necessity of ensuring that the temperature shown by the oven thermometer is being maintained equally throughout the oven.

Although many ovens fall short of this ideal, there is one made by a reputable British firm which is stated to have a maximum temperature variation throughout the oven of ± 1° C. The question of hot-air sterilization was discussed very fully in a letter on "The Sterilization of Sulphonamides" which appeared in the *Lancet* (Sept. 12, 1942) from Prof. Long, of the Johns Hopkins University School of Medicine. To quote from this letter:

"We obtained the most heat-resistant spore-formers we could find—one strain of *Cl. novyi* which the suture manufacturers use as a control organism and a strain of *Cl. sporogenes* used by the canners as a control organism. Most of the information in textbooks concerning the heat resistance of spores in hot-air ovens was built up before the present accurate thermo-electric instruments were available. Since the temperature usually given for hot-air sterilization (160° C. for one hour) is so near the melting point of sulphanilamide (163° C.), we decided to restudy the resistance of some of the spores, making use of some of the more modern instruments with extended time as is practised by some canners. It has been found that the most resistant spores of *Cl. novyi* and *Cl. sporogenes* can be killed at a temperature far below the melting point of sulphanilamide if the time element is extended sufficiently: 130° C. kills these organisms in four hours but not in three; 140° C. kills in three hours but not in two; 150° C. kills in two hours. Various types of forced air ovens have been tried, both electric and gas. The above temperatures will not hold for static ovens or ovens improperly baffled so that one obtains cold spots.

Further suggestions on the sterilization technique for the preparation and administration of solutions for intra-spinal anaesthesia are given in a memorandum published recently by the Public Health Laboratory Service and the London Sector Pathologists Committee (*Pharmaceutical Journal*, 1947, **159**, 428).

We think that it must be agreed that sterilization by dry heat is a satisfactory method provided that the following requirements are met: (1) An adequate temperature must be maintained for an adequate time. (2) The time of sterilization must begin from the time when the whole article is at the desired temperature. (3) The oven employed must not have "hot" or "cold" spots. (4) Attention must be given to the circulation of the air in the oven if big batches of items are being sterilized. (5) A careful check must be kept by means of thermostat, thermometers, and contaminated controls to ensure that the process is efficient. The controls should be spaced throughout the batches.—We are, etc.,

Hertford. CHARLOTTE RIESENFELD.
JOHN C. H. HANSON.

REFERENCE

1 Hanne, R., *Pharm. Ztg.*, Berlin, 1937, **82**, 2.

Space for X-ray Departments

SIR,—I am much obliged to Dr. Douglas Gordon (Dec. 13, 1947, p. 977) for drawing my attention to the recommendations of the British *X*-ray and Radium Protection Committee. The plan which I put forward, as Dr. Gordon agrees, was stated not to attempt perfection in detail, and there is therefore no need to defend it. It is hoped, however, that the interest this plan may arouse may be on general principles rather than concerned with detail. Nevertheless, it is obviously important that attention should be drawn to these regulations, which were not only unknown to me but also to a distinguished architect. As Dr. Gordon has pointed out, even architects of the Ministry of Health are unaware of these regulations, and this emphasizes the need for some co-ordination and specialization in the designing of hospitals.

Many hospitals have been built by excellent architects who have been equally at home in designing a hospital, a house, a hotel, a cinema, a school, or a town hall. Recently the need for some specialist in hospital construction has been brought to my attention in my efforts to improve the lighting of

operating theatres. The amount of contradictory advice I have received from persons of no experience is quite amazing, and I am now trying to find someone who can really give valuable advice on this most important subject.

In this age of planning one hesitates to suggest a further group of planners, but at present in hospital construction the blind are leading the blind, and much time, energy, and money is expended in attempting to remedy the consequences of faults of design that ought never to have occurred. It would appear to me that either the Ministry of Health or the British Institute of Architects should consider this matter with a view to seeing that recommendations of special bodies should not pass into oblivion, and that expert advice on the special problems of hospital construction may be readily available.

Many of our hospitals are now quite out of date, badly sited, and in a poor state of repair. It is obvious that as soon as circumstances permit a great building of hospitals must take place, both to replace worn-out and obsolete buildings, and to provide new beds so urgently needed both for present and future needs. It was with a view to suggesting the general principle of self-contained units as the basis of hospital construction that I submitted my article (*Journal*, Nov. 22, 1947, p. 832). The scheme is still embryonic, and therefore any criticism that may beneficially influence its development is most welcome.—I am, etc.,

Hove, Sussex. H. J. MCCURRICH.

B.C.G. Vaccination

SIR,—May I remind those of my fellow-countrymen who "still linger shivering on the brink and fear to launch away" that in December, 1947, the Norwegian *Storting*, inspired by the Norwegian health authorities, passed a law for compulsory vaccination against tuberculosis? The easy passage of this law through the national legislature was assured by the same public health authorities, whose mustering of the evidence in favour of so radical a step was masterly. May I now suggest that we act on John Hunter's famous advice to Jenner in this way that, instead of weaving out of second-hand material gossamer threads of speculative agnosticism, we visit, in no tip-and-run spirit, the Scandinavian B.C.G. centres and there seriously study the mass of evidence accumulated over a score of years and still in large part not yet published? Quite possibly we might thus retrieve part of the march the Scandinavians have stolen on us. Might not this be a wiser course than to assume that their observations and conclusions are all wrong, and that we must make a fresh start in England on truly intelligent and impeccable lines?—I am, etc.,

Sunnfjord, Norway. CLAUDE LILLINGSTON.

Future of Almoners

SIR,—May I try, however belatedly, to comment on the points raised by Dr. Trevor H. Howell's letter on "The Future of Almoners" (Nov. 22, p. 843)? His contention that almoners spend most, though certainly not all, of their time and energy in caring for patients suffering from short-term acute illness to the detriment of those generally termed the chronic sick is undoubtedly true. There are obvious reasons for this, such as the small number of almoners in most hospitals, which necessitates a limitation of cases dealt with, and the fact that the primary duty of almoners, as an ancillary service to medicine, is to carry out the requirements of the medical staff, which as a rule centre on constructive work for those cases where conditions of home and employment directly affect health.

None the less, few almoners would claim anything but profound dissatisfaction at the present situation. Probably the reason for any apparent lack of interest in these long-term cases is not, as Dr. Trevor Howell suggests, their absorption in administrative and financial duties, but rather a profound feeling of helplessness in the face of a problem so vast that it can only be tackled successfully by a campaign in which the medical and nursing professions, public authorities, social workers, and the community at large all play their part. At present there is a deadlock. Homes for incurables are few, and by their very title suggest that for those who seek their hospitality there is no question of rehabilitation. Small nursing-homes run for profit are often extremely unsatisfactory in every way, while the chronic wards of municipal and county hospitals, housed in many cases in buildings of prison-like grimness, are as a rule overcrowded and understaffed to a deplorable degree.

The long-term case, while awaiting admission to such wards, either remains at home with no nursing at all or else in a general hospital blocks the beds needed for acute cases. If and when they are admitted to these chronic wards they find only too often that in entering they give up all hope of any life which can be called life. There is no feeling of hopefulness, no encouragement to improve, no remedial treatment, no occupational therapy, and, moreover, no selection of cases, with the consequence that the young person with possibly many years to live lies cheek by jowl with the old and senile. If by a miracle they improve sufficiently to be discharged, there is no halfway house to which they can be moved where they can stay long enough to be fitted even for a moderately normal life.

Much-needed interest is now being shown for old people, and admirable plans are being made for them in the future, but one wonders who will raise the standard of care for the younger chronic and for the middle-aged person who is slipping into chronic illness just because of lack of the right accommodation and the right treatment. I would like to assure Dr. Trevor Howell that if any constructive plans can be made he will find almoners as a whole not only ready but eager to play their part.—I am, etc.,

London, W.C.1. C. MORRIS.

Road Accidents

SIR,—In my comment (Nov. 22, p. 843) on Dr. Kenneth Soddy's paper (Oct. 18, p. 623) I conceded the importance of the psychological aspects of accidents but stressed the need for some short-term action. I suggested low speed and strict law enforcement. If Dr. Soddy does not agree, what is his short-term solution while research is going forward? May I remind him that in the latest month for which we have figures another 500 persons have been killed and 14,000 injured on the roads?

If Dr. Soddy considers our solution to be remote from reality, I would point out that its success has already been demonstrated in Providence, U.S.A. In that city, following a black period of accidents, a limit of 25 m.p.h. was introduced in 1938 and strictly enforced. Since then Providence has been the most accident-free city in the U.S.A.

In his research into the psychological causes of accidents perhaps Dr. Soddy will look into the effect on the mentality of many drivers of the propaganda that "speed is not the cause of accidents" and that motorists are "persecuted." Have not those who indulge in such propaganda in the face of the continued slaughter forgotten the debt which they owe to common humanity?—I am, etc.,

The Pedestrians' Association. T. C. FOLEY, Secretary.

British Medical Students' Association

SIR,—Much has been said of late in your columns (Dec. 6, 1947, p. 931, and Dec. 20, p. 1008) and elsewhere concerning the political colour of the British Medical Students' Association. At the last Executive Committee meeting of the Association on Dec. 20, 1947, this question was brought up by the secretary of the London Region. It was decided after discussion to publicize the following points:

(1) The Association does not concern itself with political activities. We do co-operate with the B.M.A. on such matters as curriculum reform, medical films, status of medical students and newly qualified practitioners, etc., and with the International Union of Students on the organization of the Students' International Clinical Congress, to be held by us in July, 1948; but at the same time are in no way influenced by their policies.

(2) The files and correspondence of the Association are at all times open to inspection by students and qualified members of the profession at B.M.A. House, W.C.1, and copies of our Annual General Reports and Constitution will be sent to any interested party on application.

In conclusion, Sir, may I thank you for the use of your columns.—I am, etc.,

S. M. DRANCZ, President, B.M.S.A.

POINTS FROM LETTERS

A Peck of Troubles

Messrs. J. FISHER and R. A. HINDE write: The British Trust for Ornithology is inquiring into the opening of milk bottles by tits and other species of birds. This habit is not universal and may have spread in an orderly way through the tit populations. If so, problems of the greatest interest to students of animal behaviour are involved. In reaching the closing stages of our inquiry, we have reviewed the collected information and are anxious to consult a group of educated observers distributed evenly over the country. Such a group is formed by the medical practitioners of Great Britain. While we fully realize how very busy your readers must be, we would be extremely grateful for postcards, addressed to R. A. Hinde, 31, Mount Pleasant, Norwich, giving the following information: (1) Species of birds; (2) civil parish or county; (3) year in which observer could first have noted the habit (i.e., year since which observer has lived in the district); (4) year since which milk has been available in bottles to tits in the district; (5) year in which opening of milk bottles was first actually observed; (6) type of bottle closer; (7) any other information, method of opening, etc.; (8) name and address of observer.

A Method of Abdominal Palpation

MEDICUS writes: The method described by Dr. E. W. Price (Nov. 1, 1947, p. 703) is not a new one. It can be found in the 3rd edition (1947) of the textbook on *Percussion, Auscultation, and Palpation* by L. Dunner and R. Neumann. The book, written in German, is, it is true, not easily obtainable in this country. I have been using the method for many years and was always very satisfied with the results.

Fluted Vials

Dr. E. SUTHERLAND-RAWLINGS (London, W.2) writes: Frequently there have occurred tragedies from the inadvertent use of poisonous solutions which have been mistaken for therapeutic substances of a less dangerous nature. These mistakes arise chiefly on account of: (1) Ampoules or rubber-capped vials of same manufacture which bear no distinguishable marking whereby the busy practitioner's attention can be drawn immediately to the knowledge that he is using a dangerous drug. (2) In some cases the print is small and liable to become indecipherable through damp, age, or wear. . . . To obviate this I would suggest that all vials and ampoules containing dangerous solutions or tablets be grooved or fluted on the outside so that they are immediately distinguishable to the touch, and that the glass be appropriately marked in vivid colour to arrest the attention. If such a recommendation could be enforced under the D.D.A., I feel sure further tragedies of this kind would be averted.

Penile Carcinoma

Dr. I. GOTTLIEB (Sheffield) writes: With all due respect to Mr. W. Sampson Handley, I wish to point out a gross inaccuracy in his letter (Dec. 20, 1947, p. 1010). Zipporah, who circumcised her son (Exodus iv. 25), was the wife of Moses (Exodus ii. 21) and not the wife of Abraham, though her father, Jethro, was a Midianite and thus a descendant of Keturah, second wife of Abraham (Genesis xxv. 1). Therefore Zipporah could obviously not have taught Abraham the rite of circumcision. Abraham and Ishmael were the first people in the Bible to be circumcised (Genesis xvii. 26), and the Midianites, being descended from Abraham, must also have practised circumcision. My reason for writing is that I cannot allow such a misconception to appear in print above a name as distinguished as that of Mr. W. Sampson Handley.

Early Inoculation

Dr. ROMANA G. BARTELOT (Timsbury, Bath) writes: I found the following extract when turning out my father's old deeds and manuscripts and family papers. Thomas Bartlett, of Holwell, Dorset, was a direct ancestor, and his diaries extend from 1735 to 1750. In the diary for 1743 is this entry, "Memorandum the 17th of January this year, my son and Miss Molly Tregonwell were both inoculated by Mr. Goldwyer, Surgeon of Blandford, whose pay for the said inoculation was 20 guineas." (This when a year's schooling was only 15 guineas and one gallon of brandy 7s.) "The aforesaid operation was performed on Monday, the aforesaid 17th of January, about 3 o'clock in the afternoon at Holwell. The smallpox came out on my son the ninth and tenth days after he was inoculated, but on Miss Molly not until the eleventh and twelfth days after. They both bred it very easy and had it very light and but a five days sore. My son's arms threw off the discharge and got well where they were inoculated in about 3 weeks after the smallpox was turned, but Miss Molly's arms continued the discharge for six weeks."

*** Lady Mary Wortley Montagu introduced inoculation against smallpox into England in 1717.—ED., *B.M.J.*

Obituary

T. W. LIPSCOMB, M.B., M.Ch., F.R.A.C.S.

We announce with regret the death on Nov. 19, 1947, at the age of 72, of Dr. Thomas Walter Lipscomb, chairman of the Australasian Medical Publishing Company, Limited, and former president of the New South Wales Branch Council of the B.M.A.

Thomas Walter Lipscomb was born in 1875, the son of William Griffin Lipscomb, of Maitland, New South Wales, Australia. He qualified M.B., M.Ch. at Sydney, and went into general practice at Leichhardt in Sydney in 1902. He was a foundation Fellow of the Royal Australasian College of Surgeons. Lipscomb's interests were largely surgical, and in 1903 he was appointed to the surgical staff of Lewisham Hospital, Sydney, where he was for many years the senior surgeon. In 1920 he retired from general practice and gave up his time entirely to consultant surgical work. Lipscomb was a man who took a warm interest in all professional matters and gave sterling service to the many causes he had at heart. He was a member of the New South Wales Branch Council from 1913 to 1931, and its President in 1922–3. He took a prominent part in 1913 in negotiations with the friendly societies of New South Wales, and represented the New South Wales Branch at the Annual Representative Meetings. He was one of the joint honorary secretaries of the third session of the Australasian Medical Congress (B.M.A.) held in Sydney in 1929. Lipscomb took a leading part in the organization of postgraduate education and was chairman of the New South Wales Post-Graduate Committee in Medicine from 1939 to 1944; for many years he was a member of the Board of the Prince Henry Hospital while it was functioning as a post-graduate teaching hospital; he was also a member of the Federal Council of the B.M.A. in Australia.

For over 25 years Lipscomb was closely associated with the Australasian Medical Publishing Company, responsible among many other things for the publication of the *Medical Journal of Australia*. He was also chairman of the Board of Directors of *The Maitland Mercury*, a daily paper owned by his family. Lipscomb was rightly very proud of the activities of the Australasian Medical Publishing Company, which has always maintained the highest standard. He was a man of the greatest probity and always spoke his mind simply and clearly yet without aggression. As recently as September last year he was present at the meeting of the World Medical Association in Paris. Lipscomb had a warm affection for England, and he will be missed by the many friends he had here. Of his family of seven, three sons qualified in medicine at the University of Sydney, and two of them are now practising in England.

HERBERT THOMAS HERRING died at his home in Harley Street on Nov. 22. Educated at University College Hospital, he took the M.B., B.S. Durham in 1887, and the M.R.C.S. in the same year. He acted for many years as assistant to Sir Henry Thompson, who was not only the leading genito-urinary surgeon of his day but also a fervent advocate of cremation and founder in 1874 of the Cremation Society. This work was eagerly taken up by Herring, who was active in the development of the Golders Green Crematorium, founded in 1902, of which he became managing director. At Woking he held the same position, and was for many years honorary secretary of the Cremation Society. Beyond doubt the steady expansion of the practice of cremation was due largely to his incessant propaganda. If in the second half of his life he was mainly a man of one idea, at least it was a sound idea and a progressively successful one. After qualifying, he was house-surgeon at University College Hospital. There, and later, when he joined Sir Henry Thompson, the cystoscope and *x* rays were unknown. A large part of a urinary surgeon's work consisted in catheterizing sufferers from enlarged prostate and in combating vesical infections due to faulty catheterization by other people—often the patients themselves. Herring devoted a lot of thought to perfecting a technique which should prevent bladder infection, and forty years ago he published his observations

in a volume entitled *The Sterilization of Urethral Instruments*. The aim of his teaching was self-catheterization by patients sufficiently educated to comprehend the meaning of asepsis and the way to avoid cystitis. At that time the day was just dawning when a vast reduction in the number of catheter cases was to take place, so that eventually the usefulness of his technique was diminished. His long career of public service in connexion with the Cremation Society was recognized in 1920 by the award of the O.B.E. Few men have pursued an ideal as steadily as he did for an equally long period.—H. R.

Dr. ARDESHIR HORMASJI MASINA died suddenly after a short illness on Dec. 17, at the age of 36, at the Masina Hospital, Bombay. He was the youngest son of Dr. Hormasji Masina, the well-known Parsi surgeon who had been the founder and principal managing trustee of the Masina Hospital since 1907, the year in which the institution began its life as one of the first voluntary hospitals in India. Ardeshir, like his brothers and his sister, was educated in this country and later entered the medical profession. He went from the Leys School, Cambridge, to Emmanuel College, and completed his training at St. Bartholomew's Hospital. He qualified in 1936, and took his M.B., B.Chir. at Cambridge in 1938. He became house-physician to the medical professorial unit at St. Bartholomew's for a year and later was house-physician to the London Chest Hospital. He also held the post of R.M.O. at Bradford Royal Infirmary. He took the M.R.C.P. in 1940, and proceeded M.D. in 1943, taking bronchiectasis as the subject of his thesis. It had always been his intention to carry on the hospital work which had rested for so many years on the shoulders of his distinguished father. Arriving in Bombay in 1942, he worked there until his death. When his father, who was more than 80 years of age, died in 1946 additional responsibilities fell to him in connexion with the management of the hospital. He became a leading consulting physician, and though his interests were wide he had special experience in diseases of the chest. He brought to Indian medicine a wealth of medical knowledge and culture from the West which combined with his experience of tropical medicine to give him an exceptional breadth of outlook. His scientific attitude to disease would have been of outstanding value to Bombay and the Parsi community in particular. Like his father, who in the earlier years of this century travelled frequently to European centres of surgical culture, and who many times visited this country, Ardeshir had a great respect for and an exceptional grasp of medical progress in Great Britain. Gifted as he was with an acute and alert mind, he was quickly able to grasp the essentials of any problem and to solve it with tact, wise judgment, and precision. Gentle and approachable in manner, he was kindness itself not only to his patients and his colleagues but to those visitors who were fortunate enough to be invited to visit the Masina Hospital. The writer, who was privileged to be his friend since his days at Cambridge, will always remember with gratitude the generous hospitality extended to him during a fortnight's stay at his hospital in 1943. The Masina family always welcomed to their hospital visitors from this country, and their hospitality was genuine and sincere, as only those who know India will understand. By his passing the Masina Hospital has suffered a crippling blow and the medical profession in India has lost one of its outstanding members. We who had the privilege of knowing him will always remember him with sadness and affection, and to his brothers and his sister our deepest sympathy is extended.—P. H. W.

Dr. JAMES FREDERICK DIGBY WILLOUGHBY died at his home in Southwell on Dec. 17 at the age of 91. Dr. Willoughby was a student at St. George's Hospital, and qualified in 1879. He had lived in Southwell for over 62 years and was in active practice until 1927. In his early days he acted as medical officer to the South Notts Hussars, and during the first world war he was in charge of the V.A.D. hospitals at Burgage Manor and Brackenhurst Hall. For his services in this connexion he was awarded the O.B.E. He had been a J.P. since 1907 and had served on the governing body of the Minster Grammar School for many years. He had always taken the greatest interest in the religious and educational life of the town. He was a member of the British Medical Association for over fifty years, and was chairman of the Nottingham Division in 1926–7. He leaves two sons and one daughter.

Dr. HENRY NATHAN WARNER COLLINS died on Dec. 23, 1947. A student of University College and King's College, London, he graduated B.Sc. in 1915 and qualified in 1919, taking the Cambridge D.M.R.E. in the following year. He then went on to study at the Universities of Paris and Lausanne, and in 1927 took the M.D. of Lausanne University. Recently he had been called to the Bar, and he was well known as a radiologist on the consultant staff of the Weir Hospital and St. James Hospital, Balham; he was consultant physician to the Royal Society of Musicians and to the Children's Rest at Roehampton. He had also been associated with the Chiswick General Hospital and with the Bolingbroke Hospital.

C. A. H. F. writes: By the early decease of Henry N. Warner Collins the Lausanne Medical Graduates' Association loses one of its most distinguished and outstanding members. He was a man of exceptional ability and enterprise. He held many consulting appointments, and his tall and impressive figure will not easily fade from our memories, nor his clear and businesslike script. In his own sphere he will be greatly missed and his place will be difficult to fill. He leaves a widow and one daughter, Cynthia, to whom we extend our sympathy.

A memorial service for Mr. G. F. Stebbing will be held at St. Philip's Church, Kennington, at 12 noon on Monday, Jan. 12.

The Services

In a dispatch submitted to the Secretary of State for War by General Sir Frederick A. Pile, Bt., G.C.B., D.S.O., M.C., General Officer Commanding-in-Chief, Anti-Aircraft Command, and published in a *Supplement* to the *London Gazette* dated Dec. 18, 1947, Major-General P. H. Mitchiner, C.B., C.B.E., T.D., is mentioned as having given outstanding service.

The relevant paragraph reads: "Major-General P. H. Mitchiner, C.B., C.B.E., T.D., organized the medical services in the Command. He was an administrator of a very high order as well as a first-class medical officer. He rendered great services to the State."

The Efficiency Decoration of the Territorial Army has been conferred upon Lieutenant-Colonel T. C. Williams, R.A.M.C.

DEATHS IN THE SERVICES

The death of Group-Captain HENRY COOPER came as a shock to his many friends in the Services and in civilian circles. It is not often that an opportunity occurs for the formation of an entirely new arm of the fighting services. Cooper was one of the little band, which included, among others, Hardy Wells, Nelson Roche, Stanford, Martin Flack, Treadgold, Stanley Turner, and the late T. S. Rippon, who were concerned with Air-Commodore (now Lieut.-General) M. H. G. Fell, in starting the Royal Air Force Medical Branch. The story of those early days cannot yet be told in full. But it was then that Cooper's infinite capacity for taking pains, organizing ability, tireless tact, and kindliness had full play. It was generally hoped and expected that he would occupy the director's chair, but the term of office of the then director was extended, and Cooper had to retire on reaching the age limit. After his period of service at the Air Ministry in the early days of the R.A.F., Cooper served as P.M.O. India, from whence he went to Iraq as P.M.O. On returning to the United Kingdom he was appointed P.M.O., Air Defences of Great Britain, in 1927, which appointment he held until he retired. After his retirement in 1932 he became Clerk and Registrar of the Society of Apothecaries. On the outbreak of war in 1939 Cooper was past the age at which he would be liable to recall. Nevertheless, he volunteered for service, and was appointed P.M.O. Balloon Command. In the 1914–18 war he received the D.S.O. for his services at Dunkirk. He was also made an officer of the Order of St. John of Jerusalem and officer of the Order of the Crown of Belgium. In 1930 he was appointed Honorary Surgeon to His Majesty the King. After leaving Cambridge, Cooper went to the London Hospital and qualified M.R.C.S., L.R.C.P. in 1904, and entered the Royal Navy, from which he transferred to the newly formed R.A.F. He leaves a widow and one daughter, who is herself the widow of a naval officer killed in the last war.

Sir George Henderson, Secretary of the Department of Health for Scotland, opened the new out-patient department at the Dumfries and Galloway Royal Infirmary on Oct. 31, 1947. He recalled that it was almost 200 years since the hospital had been founded, and that it was there in 1846 that the first major operation under a general anaesthetic had been performed in Europe. He reassured his audience that the hospital would not be lost in a huge bureaucratic machine trying to administer it from far away, but that the local people would have as much say as possible in its running.

No. 51

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended Dec. 20.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1947					1946 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	33	1	24	—	1	29	4	21		—
Deaths		1	1				—	3		
Diphtheria	209	19	57	11	13	243	20	69		16
Deaths	3	—	—	—	1	3	1	1		—
Dysentery	83	16	34	—	—	62	7	31		—
Deaths				—	—					—
Encephalitis lethargica, acute	—	—	—	—	—	—	—	—		—
Deaths		—					1			
Erysipelas			45	12	5			46		4
Deaths		—					—			
Infective enteritis or diarrhoea under 2 years				30						
Deaths	78	7	11	10	3	91	5	11		6
Measles*	3,209	133	501	139	19	7,769	239	240		349
Deaths	2	—	—	1	—	4	—	2		—
Ophthalmia neonatorum	53	2	5	—	—	79	4	15		—
Deaths										
Paratyphoid fever	6	11	(B)	—	—	6	—	2(B)		—
Deaths	—	—	—	—	—	—	—	—		—
Pneumonia, influenzal	841	61	6	6	23	699	50	12		9
Deaths (from influenza)†	15	2	3	2	4	26	5	4		—
Pneumonia, primary			404	24				365		
Deaths		50		14	16		57			18
Polio-encephalitis, acute	5	—				2	—			
Deaths		—					—			
Poliomyelitis, acute	55	4	13	4	1	13	—	—		—
Deaths		—					1			
Puerperal fever		2	13		—		3	9		—
Deaths										
Puerperal pyrexia‡	135	16	10	—	—	133	22	6		—
Deaths		—					—			
Relapsing fever	—	—			—	—	—	—		—
Deaths										
Scarlet fever	2,063	159	299	44	56	1,201	73	330		42
Deaths	1	—	2	—	—	—	—	—		—
Smallpox	—	—	—	—	—	—	—	—		—
Deaths				—	—					—
Typhoid fever	4	—	2	5	—	4	—	2		—
Deaths	—	—	—		—	—	—	—		—
Typhus fever	—	—	—	—	—	—	—	—		—
Deaths				—	—					—
Whooping-cough*	1,699	122	32	27	9	1,586	103	231		38
Deaths	10	1	1	1	—	18	1	4		2
Deaths (0–1 year)	445	48	68	37	19	539	73	96	34	30
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	5,298	779	704	217	138	5,682	945	721	184	171
Annual death rate (per 1,000 persons living)			15·6	13·7				15·9		
Live births	7,858	1186	953	290	229	9,158	1403	1137	389	259
Annual rate per 1,000 persons living			19·2	18·3				22·9		
Stillbirths	201	24	28			269	29	35		
Rate per 1,000 total births (including stillborn)			29					30		

* Measles and whooping-cough are not notifiable in Scotland, and the returns are therefore an approximation only.

† Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

‡ Includes puerperal fever for England and Wales and Eire.

EPIDEMIOLOGICAL NOTES

Poliomyelitis

Notifications of poliomyelitis in the week ended Dec. 27, 1947, were 44 (55) and of polio-encephalitis 4 (5). Figures for the previous week are in parentheses. The following counties have had no notifications in December: Cambridge, Cumberland, Huntingdon, Lincs (Holland), the Soke of Peterborough, Rutland, Yorks (N. Riding), Anglesey, Brecknock, Caernarvon, Cardigan, Merioneth, Pembroke, Radnor.

Discussion of Table

In *England and Wales* there was an increased incidence of scarlet fever 124 and acute pneumonia 118, while a decrease was recorded for measles 170, whooping-cough 38, cerebrospinal fever 31, diphtheria 24, dysentery 23, and acute poliomyelitis 22.

There were only small fluctuations in the local trends of scarlet fever except for increases in Staffordshire 40 and Glamorganshire 35. The only appreciable variation in the returns of diphtheria was an increase of 8 in Lancashire.

Every area except the northern counties recorded an increase in cases of pneumonia, and the largest was that of London 32. The only change of any size in the local returns of whooping-cough was an increase of 30 in London.

The decrease in the incidence of measles was mainly contributed by two counties, Northamptonshire and Yorkshire West Riding with decreases of 168 and 106 respectively. Surrey with an increase of 73 in the notifications of measles was the only area with a large change in the trend of this disease.

Half of the total notifications of paratyphoid and typhoid fever were reported from Lancashire. The chief centres of dysentery were Lancashire 29, London 16, and Yorkshire West Riding 13.

After the slight interruption of last week the downward trend of acute poliomyelitis was continued. The only administrative areas with more than one case of poliomyelitis were Lancashire, Manchester C.B. 3; Warwickshire, Birmingham C.B. 3; Yorkshire West Riding, Sheffield C.B. 2; Oxfordshire, Oxford C.B. 2; Norfolk, Norwich C.B. 2; London, St. Pancras 2; and Devonshire, Dawlish M.B. 2.

An outbreak of paratyphoid B has been reported from Ipswich and the surrounding district, and 22 cases had been admitted to Ipswich isolation hospital up to Dec. 30. A suspected carrier who worked in a bakery has been admitted to hospital.

In *Scotland* increases were recorded in the notifications of measles 91 and acute primary pneumonia 85; a decrease of 10 was reported in the returns for diphtheria. The rise in the incidence of pneumonia was general throughout the country.

In *Eire* the chief features of the returns were a decrease of 53 in the incidence of measles and an increase of 12 in the notifications of scarlet fever.

In *Northern Ireland* the only variation of any size in the returns of infectious diseases was an increase of 12 in the notifications of scarlet fever.

Quarterly Returns for England and Wales

The birth rate during the September quarter was 20.0 per 1,000, compared with 19.7 for the third quarter of 1946 and an average of 15.7 for the corresponding quarters of 1941–5. The number of births registered was the highest recorded for any third quarter since 1920. The infant mortality was 32 per 1,000 live births; this was 9 below the average rate for the third quarters of the ten preceding years 1937–46. Stillbirths represented 22.7 per 1,000 of the total births, and this rate was the lowest recorded in this country in any quarter. The general death rate was 9.0 per 1,000, compared with 9.3 for the corresponding quarter of 1946 and an average death rate of 9.4 for the third quarters of the five years 1941–5. For the first time an estimate of the population by sex and age is given in this quarterly return.

A survey of sickness in the June quarter of 1947 is tabulated in detail according to the number of illnesses, days of incapacity, and medical consultations for age, sex, occupation, and income groups. No critical analysis of the tables is included in the report. It provides a valuable source of information for the research worker, but in its present form of absolute figures it does not give the general reader an immediate picture of the sickness experience of the nation.

Week Ending December 27

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,469, whooping-cough 1,141, diphtheria 157, measles 2,583, acute pneumonia 690, cerebrospinal fever 26, acute poliomyelitis 44, dysentery 53, paratyphoid 22, and typhoid 2.

Universities and Colleges

UNIVERSITY OF GLASGOW

Stanley Alstead, M.D., F.R.C.P., F.R.F.P.S., has been appointed Regius Professor of Materia Medica and Therapeutics in the University in succession to the late Prof. Noah Morris, M.D., F.R.C.P., F.R.F.P.S.

UNIVERSITY OF DURHAM

John Bright Duguid, M.D., professor of pathology and bacteriology in the University of Wales, has been appointed to the Chair of Pathology, King's College, Newcastle-upon-Tyne, and to the Department of Pathology in the Royal Victoria Infirmary.

UNIVERSITY OF LONDON

The title of Professor of Bacteriology in the University has been conferred on the Rt. Hon. Lord Stamp, M.B., B.Ch., in respect of the post held by him at the British Postgraduate Medical School.

UNIVERSITY OF LIVERPOOL

The Council of the University has appointed John Tertius Morrison, O.B.E., M.B., F.R.C.S., as full-time Dean of the Medical Faculty, in succession to Prof. T. B. Davie, M.D., F.R.C.P.

The following candidates have been approved at the examinations indicated:

M.D.—S. Bender, D. M. I. Freeman, J. D. King, Teresa Lightbound, M. G. McEntegart, R. C. Nairn.

M.Ch.ORTH.—H. G. A. Almond, G. S. Colvin, J. J. Commerell, M. D. Desai, J. Dickie, W. H. Fahrni, C. J. Kaplan, J. G. Kerr, H. K. Lucas, T. B. McMurray, B. F. Miller, N. H. Morgan, A. G. O'Malley, G. V. Osborne, W. Parke, B. Polonsky, T. Price, G. I. Roberts, V. R. Thayumanaswami.

FINAL M.B., Ch.B.—*Part III:* A. J. Borkin, H. C. Endbinder, W. P. Wilson. *Passed in separate subjects:* G. D. Currie (Medicine, Surgery), G. Frew (Medicine, Obstetrics, and Gynaecology), J. C. Humber (Surgery, Obstetrics, and Gynaecology).

D.P.H.—*Part I:* H. O. M. Bryant, A. T. Burn, R. L. J. S. Derham, Jean M. Frazer, E. N. Hugh-Jones, D. E. Jayatunge, D. B. Kennedy, J. D. Munroe, Joan E. M. Potts, R. V. L. Rudolph, R. G. Thomas.

CERTIFICATE IN PUBLIC HEALTH.—A. Griffith.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

The Royal College of Physicians of London is giving a course of postgraduate lectures in medicine from Feb. 2 until March 25. There will be approximately 26 lectures. The full programme is not yet complete but preliminary details can be obtained from the College. The inclusive fee for the course is £7 7s. and the total entry will be limited to 200. Fees are payable in advance and must be received at the College (Pall Mall East, S.W.) by Jan. 26.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

A course of lectures on anatomy, applied physiology, and pathology in their application to dental surgery will be held at the College (Lincoln's Inn Fields, London, W.C.) daily from Jan. 12 to Feb. 6 (Saturdays and Sundays excepted), and a course of lectures on general, oral, and dental surgery will be held at the College daily from Feb. 9 to March 5 (Saturdays and Sundays excepted).

The admission fee for each course is £12 12s.; Fellows and Members of the College and Fellows and Licentiates in Dental Surgery will be admitted for £10 10s. Admission cards may be obtained from the secretary of the Faculty of Dental Surgery at the College.

An Order in Council entitled the Dangerous Drugs Act (Application) Order, 1947, came into force on Jan. 1. Its effect is to bring under the control of the Dangerous Drugs Acts and Regulations the following drugs and preparations, which have not hitherto been so controlled: Amidone, its salts, and any preparation, admixture, extract, or other substance containing any proportion of amidone; and methyldihydromorphinone (commonly known as metopon), its salts, and any preparation, admixture, extract, or other substance containing any proportion of methyldihydromorphinone. It is therefore now unlawful for any person who is not authorized either under the Dangerous Drugs Regulations, 1937, or by licence, to manufacture, supply, procure, or possess any of these drugs. Persons who enjoy a general authorization under those Regulations—for example, doctors and retail chemists—must comply with the Regulations regarding the issue of prescriptions and the keeping of registers in respect of these drugs. Any persons or firms (other than those authorized under the Regulations) concerned in the manufacture, sale, or distribution of any of these drugs and preparations should make application to the Under-Secretary of State, Drugs Branch, Home Office, St. Stephen's House, Victoria Embankment, London, S.W.1, for consideration to be given to the grant of licences to permit them to continue their activities.

Medical News

Rowley Bristow Orthopaedic Hospital

The Church of England Children's Society (formerly the Committee of the Waifs and Strays) has decided to rename the St. Nicholas' and St. Martin's Orthopaedic Hospital (Pyrford, Surrey), which the Society founded, "The Rowley Bristow Orthopaedic Hospital" as an appreciation of his long and brilliant services to the institution.

Oliver Memorial Fund

The committee of the Oliver Memorial Fund offers an award to the value of £50 to a British subject whose original work is considered to have made the most notable contribution to the subject of blood transfusion during the past five years. The committee welcomes applications as well as communications drawing their attention to suitable candidates. Correspondence, accompanied by a brief résumé of such work, should be sent to Mr. F. W. Mills, National Provincial Bank, Ltd., Holborn Circus Branch, London, E.C.1, on or before Feb. 29, 1948.

Gift for Research

Lord Nuffield has given £50,000 to Lincoln College, Oxford, to found three research fellowships to be known as the Nuffield (Penicillin) Research Fellowships. The gift commemorates the discovery of penicillin's therapeutic properties in the Sir William Dunn School of Pathology, of which Sir Howard Florey, who is a Fellow of Lincoln College, is the head.

Surrey Benevolent Medical Society

The Surrey Benevolent Medical Society, which was founded in 1812, has in its gift four perpetual scholarships to Epsom College, as well as several other scholarships for boys or girls at any school approved by the society. It also gives pensions to deserving relatives of deceased members. For many years the late Dr. S. Morton Mackenzie was the honorary treasurer, and in memory of him and of his untiring energy in so successfully managing the financial affairs of the society it was unanimously agreed at the last annual meeting to name one of the scholarships after him. This scholarship will henceforth be called "The Mackenzie Scholarship." Membership of the society is open to medical men in private practice in the county of Surrey. Particulars can be obtained from the honorary secretary, Dr. L. J. Barford, Heather Lodge, Redhill, Surrey.

Joint Tuberculosis Council

At the last meeting of the Joint Tuberculosis Council a new committee was set up to consider and report on the problem of tuberculous patients whose duties bring them into close touch with children. The convener of the committee is Dr. Wilfrid Sheldon. The Council discussed the recent cuts in priority milk for tuberculous persons, and the Secretary was asked to inform the Ministries of Health and Food that the cuts were regarded with grave misgivings. In the Council's opinion the amounts of food available for tuberculous persons at home and in sanatoria are at dangerously low levels. Another matter considered was the eligibility of tuberculous persons for supplementary financial assistance under the National Assistance Bill. The Council endorsed the opinion of the Tuberculosis Group of the Society of Medical Officers of Health that eligibility for such aid should be based strictly on need and not necessarily on the fact that employment had been given up.

Court of Common Council of the Corporation of London

Major-General R. J. Blackham, C.B., C.M.G., C.I.E., D.S.O., M.D., has been re-elected a member of the Court of Common Council of the Corporation of London for the twenty-third year in succession. For many years General Blackham was the only medical member on the Court, but he was joined in 1941 by Dr. Arthur Westerman, the medical officer of The Charterhouse, who has also been re-elected.

Parkinson's Disease

The Ministry of Health issued the following statement on Dec. 30: "Some weeks ago a report appeared in certain of the lay newspapers concerning a German doctor who was alleged to have discovered a new and effective treatment for Parkinson's disease. As a result of this report a number of inquiries have been made of Government departments regarding the possibility of having the practitioner in question brought to this country to undertake the treatment of selected cases. The matter has been followed up through official channels and it is regretfully announced that the claims made in favour of this particular treatment are without foundation."

University of Athens

The title and status of Emeritus Professor of Medicine in the University of Athens has been conferred on Dr. A. P. Cawadias, O.B.E., F.R.C.P., by Royal Hellenic decree.

Honoured by Chinese Government

The Chinese Government has bestowed the Order of the Brilliant Star upon W. Perceval Yetts, C.B.E., D.Lit., M.R.C.S., L.R.C.P., Professor Emeritus of Chinese Art and Archaeology in the University of London.

Export Licensing Control

Under a new order made by the Board of Trade preparations of penicillin have been released from export licensing control. Items that have been added to the export licensing list and for which licences are therefore necessary include: gonadotrophic hormones. testosterone, oestrogens, and bile salts.

Tuberculosis Allowances Scheme

The Minister of Health has authorized an increase in the winter's fuel allowance, under the Tuberculosis Allowances Scheme referred to in paragraph 42 of Memorandum 266/T, from 3s. 6d. to 4s. 6d. a week. This allowance is available from Jan. 4 to May 1.

Health Centres Proposals

The Minister of Health had previously asked local authorities to submit proposals about health centres by Dec. 31. He now cancels this date and will shortly be sending local authorities another circular on health centres.

Wills

Dr. John Crosthwaite Bridge, formerly H.M. Senior Medical Inspector of Factories, left £2,832. Dr. Wilfrid Fawssett, of Worthing, left £6,789, and Dr. Cyril Claude Lavington, of Stoke Bishop, Bristol, left £27,948.

COMING EVENTS

Conference on Mental Health

The National Association for Mental Health (39, Queen Anne Street, London, W.1) has arranged a conference on mental health to be held at Seymour Hall, Seymour Place, London, W., on Thursday and Friday, Jan. 15 and 16, at 10.30 a.m. each day. The subjects for discussion are "Re-adaptation to Life and Work of Persons who have suffered from Nervous or Mental Disorder" (speakers, Drs. G. R. Hargreaves and Donald Stewart); "Methods of Handling Difficult Children in Primary and Post-primary Schools, and Selection and Training of Staffs for Boarding Homes for Difficult Children" (speakers, E. M. Bartlett, Ph.D., and Miss Clare Britton); "Responsibilities of Local Authorities in Relation to Mental Health and the N.H.S. Act, 1946" (speakers, Drs. K. Soddy and Doris M. Odlum); and "Education for Mental Health as a National and International Responsibility" (speakers, Brigadier A. Torrie, M.B., Ch.B., and Dr. J. R. Rees). Particulars of conference fees may be obtained from the conference secretary of the association at the address above.

Course on Medical Treatment

The University of Leeds Postgraduate Committee has arranged a clinical week-end course devoted to the subject of medical treatment, and open to general practitioners and others interested, to be held at the General Infirmary at Leeds on Feb. 21 and 22. The fee for the course is £1 1s. Further information and application forms may be obtained from the Senior Administrative Officer, School of Medicine, Leeds, 2.

Edinburgh Refresher Course

A fortnight's refresher course at Edinburgh University begins on Monday, May 3, at 9 a.m. It is intended primarily for demobilized medical officers (Class II) and for insurance practitioners. Fee for graduates not claiming expenses from Government sources, 10 gns.

International Leprosy Congress

The International Leprosy Congress will be held in Cuba from April 3–11, 1948. The last congress was held in Cairo in 1938, and the next should have been held in Paris five years later; the war, of course, prevented this. Dr. H. W. Wade, the president of the International Leprosy Association, and for many years in charge of the Culion Leper Settlement in the Philippines, with 6,500 patients under his care, arrived recently in this country to consult with Dr. Ernest Muir and Dr. Gordon Ryrie, of the British Empire Leprosy Relief Association, about the arrangements for next year's congress.

Postgraduate Course in Uruguay

A postgraduate course in tuberculosis will be held on March 1–13, 1948, at the Instituto de Tisiologia, Montevideo, Uruguay.

Summer School in Health Education

The Central Council for Health Education will hold a residential summer school in health education at "High Leigh," Hoddesdon, Herts, from Aug. 11 to 25, under the direction of Dr. Robert Sutherland. The object of the school is to present the general principles and practice of health education to a wide variety of students, including educational and medical administrators, doctors, and nurses. Lectures are planned to cover the basic knowledge needed by health educators and will include lectures in physiology (by Prof. Samson Wright), psychology (by Prof. James Drever), the biology of infection (by Dr. Robert Cruickshank), and social factors affecting health (by Prof. J. M. Mackintosh). There will be opportunity for attendance at exhibitions of health education material and for nature study expeditions, sports, and ballroom and folk dancing. The inclusive cost of the course per person will be £16 16s. Applications should be sent in before March 31. Those wishing for further details should write to the Medical Adviser and Secretary, Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1.

Mental Deficiency

The 72nd Annual Meeting of the American Association of Mental Deficiency and the First International Congress on Mental Deficiency will be held at the Copley Plaza Hotel, Boston, U.S.A., the former on May 18–22, the latter on May 17–22, 1948.

SOCIETIES AND LECTURES

Monday

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—Jan. 12, 8 p.m. *"More Worthies in Medley's Picture of the Founders of the Medical Society of London."* Presidential Address by Mr. W. E. Tanner.

Tuesday

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—Jan. 13, 5 p.m. *"Pneumoconiosis of Coal Miners."* Goulstonian Lecture by Dr. C. M. Fletcher.

CHELSEA CLINICAL SOCIETY.—At South Kensington Hotel, 47, Queens Gate Terrace, London, S.W., Jan. 13, 7 p.m. for 7.30 p.m. *"Industrial Medicine."* Discussion to be opened by Dr. N. Langdon Lloyd.

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Jan. 13, 5 p.m. *"Cutaneous Syphilis."* Dr. A. C. Roxburgh.

Wednesday

INSTITUTE OF DERMATOLOGY, 5, Lisle Street, Leicester Square, London, W.C.—Jan. 14, 5 p.m. *"X-ray Technique."* Dr. C. W. McKenny.

INSTITUTE OF SOCIAL PSYCHIATRY.—At Seymour Hall, Seymour Place, London, W., Jan. 14, 2 p.m. *Therapeutic Social Clubs.* Conference and discussion.

Thursday

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—Jan. 15, 5 p.m. *"Pneumoconiosis of Coal Miners."* Goulstonian Lecture by Dr. C. M. Fletcher.

EDINBURGH CLINICAL CLUB.—At B.M.A. Scottish House, 7, Drumsheugh Gardens, Edinburgh, Jan. 15, 8 p.m. *"Endocrines in Gynaecology."* Dr. E. C. Fahmy.

BRITISH INSTITUTE OF RADIOLOGY, 32 Welbeck Street, London, W.—Jan. 15, 8 p.m. *"The Role of Radiology in the Teaching of Anatomy."* Prof. A. B. Appleton and Dr. J. W. McLaren.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17, Bloomsbury Square, London, W. C.—Jan. 15, 7.30 p.m. *"The Place of Pharmaceutical Research in Medicine."* A. G. Fishburn, Ph.C., F.R.I.C., D.P.A.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.—At 26, Portland Place, London, W., Jan. 15, 7.30 p.m. *"Symposium on Leprosy."* Opening paper to be read by Dr. E. Muir and followed by Lieutenant-Colonel E. W. O'G. Kirwan, I.M.S.(ret), and Dr. A. R. D. Adams.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, S.W.—Jan. 15, 4.30 p.m. *Psychiatric lecture-demonstration.* Dr. D. Curran.

Friday

FACULTY OF RADIOLOGISTS.—At Royal College of Surgeons, Lincoln's Inn Fields, London, W.C., Jan. 16, 2.30 p.m., Diagnosis Section Meeting. *"Some Surgical Findings in Intrathoracic Disease."* Paper by Dr. J. V. Sparks. Followed by discussion.

LONDON CHEST HOSPITAL, Victoria Park, E.—Jan. 16, 5 p.m. *"Surgery of the Oesophagus."* Mr. D. S. M. Barlow.

ROYAL MEDICAL SOCIETY, 7, Melbourne Place, Edinburgh.—Jan. 16, 8 p.m. *"Aetiology and Treatment of Asthma."* Dissertation by Mr. D. M. McNab.

Saturday

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION.—At Queen Elizabeth Hospital for Children, Hackney Road, London, E. Jan. 17, 3 p.m. Clinical meeting.

APPOINTMENTS

Group Captain J. Hutchieson, M.B., B.Ch., D.P.H., has been seconded from the Air Ministry to the Ministry of Civil Aviation as Chief Medical Officer. He will review the Ministry of Civil Aviation's medical requirements and submit proposals.

After qualifying at Queen's University, Belfast, Group Captain Hutchieson joined the R.A.F. in 1936 and has been a senior medical officer on the staff of the Director General Medical Services, Air Ministry, since 1938.

Dr. E. C. Allibone has been appointed Honorary Physician to the Children's Department of the General Infirmary at Leeds from Jan. 1.

Christian William Fraser MacKay, M.B., Ch.B., has been appointed a member of the Executive Council of the Gambia.

The Minister of Health has appointed Miss Elizabeth Cockayne, S.R.N., S.C.M., to be Chief Nursing Officer Designate. Miss Cockayne is matron at the Royal Free Hospital, London.

MILLER, A. A., M.D., D.P.H., D.T.M., Director, Department of Pathology, Preston and County of Lancaster Royal Infirmary.

WARN, J. F., M.D., D.P.H., Medical Officer of Health and School Medical Officer, City of Oxford.

BIRTHS, MARRIAGES, AND DEATHS

BIRTHS

Baldwin.—On Dec. 25, 1947, at Bromhead Nursing Home, Lincoln, to Mabel, wife of Dr. R. B. T. Baldwin, a daughter—Jancis Rae.

Edwards.—On Dec. 3, 1947, to Ivan (*née* Carson), wife of Dr. M. D. Edwards, "St. Margaret," Crawfordsburn, Co. Down, a son—Robert Carson.

Hamilton.—On Dec. 26, 1947, at Lynfield Nursing Home, Altrincham, to Geraldine (*née* Gould), wife of Dr. R. S. B. Hamilton, a son.

Harders.—On Dec. 15, 1947, at 12, The Drive, Bounds Green Road, N., to Catharine, wife of Dr. Jacob Harders, a daughter—Carolyn Ann.

Ross.—On Dec. 18, 1947, to Betty, wife of Dr. Kenneth M. Ross of Southsea, a son.

Sutton.—On Dec. 28, 1947, at Sidcup, Kent, to Catherine (*née* Howard), wife of Dr. P. H. Sutton, a son.

Templeman.—On Dec. 25, 1947, at Buckingham Nursing Home, Leeds, to Anne (*née* Thompson), wife of Dr. G. H. Templeman, M.B.E., 5, Wynford Grove, Leeds, a daughter.

MARRIAGE

Grace—Cope.—On Jan. 3, 1948, at the King's Chapel of the Savoy, Michael Anthony Grace to Philippa Agnes Lois Cope, only daughter of Mr. V. Zachary Cope and the late Mrs. Cope.

DEATHS

Alexander.—On Jan. 4, 1948, William Alexander, M.B., Ch.B., Priestfield, Keighley Road, Colne, Lancs.

Chisholm.—On Dec. 20, 1947, Donald Chisholm, M.B., Ch.B., aged 46.

Courtauld.—On Dec. 26, 1947, at Perces, Greenstead Green, Essex, Elizabeth Courtauld, M.D.

Cowie.—On Jan. 5, 1948, at Blackbrook House, Bickley, Kent, William Cowie, M.B., C.M., aged 76.

Davar.—On Sept. 25, 1947, Framji Edalji Davar, L.M.S., aged 87.

Day.—On Dec. 31, 1947, Frank Herbert Day, M.B., Ch.B., "Inchbrook," Kenilworth.

Fellows.—On Jan. 3, 1948, at The Old Rectory, Church Stretton, Frederick MacFarlane Fellows, F.R.C.S.Ed.

Ferguson.—On Jan. 4, 1948, at 162, Eccles Old Road, Salford, 6, Egerton Allen Ferguson, M.C.P.S.

Fitzgerald.—At Cork, Professor Denis Patrick Fitzgerald, M.D., aged 76.

Greeves.—On Dec. 31, 1947, at The Bosk, Broadstone Dorset, Thomas Neville Greeves, M.R.C.S., L.R.C.P., aged 84.

Hedley.—On Jan. 3, 1948, Edward Williams Hedley, M.B.E., M.D., The Cottage, Thursley, Godalming, aged 74.

Jones.—At The Hollies, Merthyr, William Watkin Jones, M.D., J.P., aged 82.

Latham.—On Dec. 28, 1947, at 52, Penn Road, London, N., Harold William Latham, M.R.C.S., L.R.C.P.

Lefevre.—On Dec. 21, 1947, at Studley House, Longton, Stoke-on-Trent, George Louis Lefevre, M.B., C.M., beloved husband of Elizabeth H. Lefevre.

Leishman.—On Jan. 3, 1948, at Bearehill, Brechin, Angus, Thomas Arthur Leishman, M.D., J.P., aged 87.

McLinden.—On Jan. 3, 1948, at Marscroft, Ripponden Road, Oldham, William Riddock McLinden, M.B., Ch.B., aged 53.

Nathan.—On Dec. 30, 1947, at 122, Sussex Way, London, N., Albert Nathan, M.R.C.S., L.R.C.P., aged 46.

Parsons.—On Dec. 18, 1947, at Fairfield, 2, Rockleaze, Bristol, Henry Frank Parsons, M.R.C.S., L.R.C.P.

Robb.—On Jan. 2, 1948, at 1, Windsor Terrace, Dundee, John James Robb, M.C., F.R.C.S.Ed.

Rutherford.—On Dec. 31, 1947, at 27, Browning Road, Worthing, George James Rutherford, M.R.C.S., L.R.C.P., aged 78.

Sankey.—Suddenly, Joseph Nicholas Sankey, F.R.C.S., aged 47.

Scaife.—On Dec. 30, 1947, at Bickington, Cecil Scaife, M.D., Lieutenant-Colonel, R.A.M.C., retired.

Siegham.—On Dec. 22, 1947, at Basle, Switzerland, Frederick Siegham, M.D., aged 56.

Strange.—On Dec. 29, 1947, at 2, Belsize Avenue, London, N.W., Robert Gordon Strange, M.B., M.S., aged 75.

White.—On Jan. 2, 1948, at Hospital of St. John and St. Elizabeth, London, N.W., Frank Harris White, M.R.C.S., L.R.C.P., aged 75.

Whiteside.—On Dec. 31, 1947, at Grove House, Hadlow, Kent, John Hewetson Whiteside, M.B., C.M., aged 84.

Any Questions?

Correspondents should give their names and addresses (not for publication) and include all relevant details in their questions which should be typed. We publish here a selection of those questions and answers which seem to be of general interest.

Prevention of Ophthalmia Neonatorum

Q.—*What is the best routine to adopt in order to prevent ophthalmia neonatorum?*

A.—The fundamental fact in the prophylaxis of ophthalmia neonatorum is that a healthy mother cannot infect her baby, while an affected mother exposes the baby to that danger. The prophylaxis of ophthalmia neonatorum therefore centres, in the first place, on the mother rather than on the baby. In days gone by gonorrhoea was regarded as almost exclusively the cause of ophthalmia neonatorum. Present-day statistics show that gonococcal ophthalmia neonatorum accounts for not more than about 20 to 25% of the cases—compared with staphylococcal ophthalmia neonatorum and the form of the affection due to a virus which account for about 35 and 30% respectively. The prophylaxis of ophthalmia neonatorum is therefore a matter of eliminating maternal infection and not merely maternal gonorrhoea. The best routine measure to be adopted involves intensive antenatal care, and the elimination of leucorrhoea in the expectant mother. For the baby Credé's method is a useful but not a totally adequate measure. The older statistics summarized in Sydney Stephenson's *Ophthalmia Neonatorum*, 1907, are conclusive evidence that the introduction of the Credé procedure greatly reduced the incidence of this disease. But it is also clear that it was no foolproof measure entirely eliminating the affection. Sorsby has shown (*Ophthalmia Neonatorum*, 1945, Hamish Hamilton) that in spite of the rigorous use of the procedure some 0.1% of all babies develop gonococcal ophthalmia neonatorum.

The traditional Credé procedure consists of two distinct parts. Swabbing of the eyelids as soon as the head is born and before the eyes are opened, and rigid avoidance of contaminating the face or eyes with the bath water in which the baby has been washed, are measures that may be regarded as asepsis. The instillation of silver nitrate or other agents is an attempt at antisepsis. There is some evidence that the omission of the antiseptic component tends to raise the incidence of ophthalmia neonatorum. The evidence is, however, not conclusive, and it would appear that other agents than silver nitrate are at least as efficacious. In the series reported by Sorsby the incidence of ophthalmia neonatorum when argyrol or protargol was used was lower than that in births where silver nitrate was the agent. Whether the difference is statistically significant it is impossible to decide, as so many other factors have to be taken into account. On the other hand, there was a rather higher incidence when mercury perchloride and acriflavine in castor oil were used. It would appear that there is no conclusive evidence that the antiseptic component has any definite value, and it is still less certain whether any particular antiseptic is better than another. The recent suggestion that sodium sulphacetamide might replace the traditional antiseptics is ill founded. In the first place, there is no conclusive evidence that the sulphonamides locally are of value. Secondly, the momentary action obtained by the instillation of one or two drops that are rapidly washed out from the eye can hardly be expected to achieve much; sulphonamides locally certainly do not sterilize an infected conjunctival sac as a pre-operative measure. Penicillin, though of undoubted value locally, is again unlikely to achieve disinfection of an infected conjunctival sac by momentary contact..

In view of these observations it would appear that the asepsis component rather than antisepsis is the essential aspect of the Credé procedure. Reliance must therefore be placed on swabbing the lids as soon as the head is born and before the eyes are open, and avoidance of any possible sepsis being carried to the face or eyes. It is safe to assume that the conjunctival sac of the newborn baby is sterile so long as the lids are closed and that the baby will not contract ophthalmia neonatorum if the conjunctival sac is protected from septic material on the face, in the bath water, and on the linen.

Treatment of Ascariasis

Q.—*How would you treat ascaris infestation in children?*

A.—Probably the most satisfactory method of treating ascaris infestation in children at the present time is with hexylresorcinol crystals. The dose recommended is 0.1 g. for each year up to the age of 10. A saline purge is required the night before treatment, which should be given on an empty stomach, and a further purge two hours after treatment. No food should be taken for five hours. The treatment can be repeated in five days. If the drug is given in capsules, these should not be chewed, as they are liable to cause erosion of the buccal mucous membrane. Apart from this the treatment is non-toxic, though the drug occasionally acts as a gastro-intestinal irritant.

Alternatives to Cod-liver Oil

Q.—*In the case of a child who tolerates calciferol but will not take cod-liver oil how can vitamin A be supplemented other than by carotene tablets, which are expensive? What is the vitamin-A content of freshly extracted raw carrot juice?*

A.—Alternatives to cod-liver oil are: (*a*) Vitaminized oil, *B.P.C.*, containing 1,000 units of vitamin A and 100 units of vitamin D per gramme. Dose: 3 to 6 ml., or approximately 1 to 2 small teaspoonfuls, daily. (*b*) Emulsion of vitaminized oil, *B.P.C.*, containing 50% of prescription *a*. Dose is twice that of *a*. (*c*) Extract of malt with vitaminized oil, *B.P.* Contains 15% of prescription *a* by volume. Dose: 20 to 40 ml., or approximately 5 teaspoonfuls to 5 dessertspoonfuls, daily. (*d*) Ministry of Food cod-liver-oil compound with added vitamin D, which contains 1,000 units of vitamin A and 200 units of vitamin D per gramme. Dose: 1/2 teaspoonful up to 6 months; over 6 months, 1 teaspoonful. (*e*) Concentrated solutions of vitamins A and D, *B.P.* Dose: 2 minims (0.12 ml.) daily.

These quantities will provide the optimum daily requirements of vitamins A and D. If proprietary preparations are used, care should be taken that a dose is given providing approximately 3,000 to 6,000 units of vitamin A and 600 units of vitamin D daily. The vitamin-A content of carrot juice is approximately 540 units per ounce (28.4 ml.)

Transplantation of Ureters

Q.—*What treatment should be advised for complete epispadias in a boy where the symphysis pubis is normal and there is no sphincteric control of the bladder? At what age would it be advisable to consider transplantation of the ureters? Can anything be done to keep these patients dry (portable urinals have proved unsatisfactory), and are there any special schools where they could be educated?*

A.—The majority of surgeons would advocate transplantation of the ureters for such a case. The usual age for operation is about 3 or 4 years. The earlier the age the greater are the technical difficulties, owing to the smallness of the structures involved. Even at the age of 4 years difficulties are encountered, and it would be preferable that the operation should be done by a surgeon with experience of abdominal work in children. There seems to be no satisfactory method of keeping these patients dry, and no special schools where they can be educated.

Treatment of Parkinsonism

Q.—*(a) Have there been any further new developments in the treatment of Parkinson's disease? (b) What is the new treatment of Parkinsonism recently reported by Sigwald, Bovet, and Dumont?*

A.—(*a*) Belladonna, hyoscine, hyoscyamine, atropine, etc., remain the most useful palliative measures in the treatment of Parkinson's disease.

(*b*) In the *Revue Neurologique* (1946, **78**, 581) these authors state that they have had good results in the treatment of Parkinsonism with 2987 R.P., which is the chlorhydrate of diethylaminoethyl-N-thiodiphenylamine. So far as the writer knows this is the first published report on the clinical action of this drug, which is not yet available in this country.

Enlarged Labia Minora

Q.—*It is often said that large labia minora in women are caused by masturbation. Is there any adequate support for this statement?*

A.—Repeated manipulation or stretching of the labia minora can result in their permanent enlargement. It is customary among the women of some primitive tribes to produce gross hypertrophy of the nymphae by such means. Masturbation, therefore, and indeed any source of chronic irritation, can in theory result in hypertrophied labia, but it is probable that the importance of such causes is frequently exaggerated. It is impossible to prove, if only because a patient's denial of masturbation is not usually to be accepted, but it would appear that the condition is most often a developmental anomaly. This view is supported by the following observations: (*a*) the hypertrophy not infrequently affects one side only; (*b*) it is found in women in whom there is no other reason to suspect masturbation; (*c*) it is often not seen in cases where masturbation is admitted. It should be added that when hypertrophied labia and masturbation are associated it may be difficult to say which is the cause and which the effect.

Absent Palatal and Corneal Reflexes

Q.—*What is the significance of absence of palatal and corneal reflexes—together or separately? I have seen these signs in hospital in cases of hysteria, and also in apparently normal patients.*

A.—Both the palatal and the corneal reflexes may be unobtainable—either separately or together—in cases of hysteria. No serious significance is necessarily to be attached to a failure to elicit these reflexes. Nevertheless a unilateral absence of the corneal response may be an important sign, indicating some interference with the trigeminal nerve or the fillet. Loss of the palatal reflex on one side or both may, of course, be an indication of loss of function of the 9th or 10th cranial nerve.

Piercing the Ears

Q.—*May I have particulars of the technique of piercing the ears?*

A.—Under local analgesia the lobe is transfixed with a wide-bore hypodermic needle. Through this hole a gold ring (hinged and with a sharp point) is introduced. In three months the wound will be epithelized. (The rings can be obtained from a good firm of instrument-makers.) See also an earlier reply (1944, **2**, 615 and 806).

Testosterone Propionate

Q.—(*a*) *Is there an oral preparation of testosterone propionate?* (*b*) *Is local application of an ointment containing testosterone propionate to undeveloped genitalia in an adult female likely to promote normal development, and is such a preparation available?*

A.—(*a*) Testosterone does not act by mouth, but methyl testosterone does. It is available in 5-mg. tablets, and from three to six may be given daily. (*b*) The answer is in the negative. It would also be in the negative if the question involved testosterone given by injection. There is available a preparation of testosterone in the form of an ointment, but it is not satisfactory for most purposes.

Fitness for Work in Compressed Air

Q.—*What outstanding factors would determine a man's unfitness to work in a compressed-air atmosphere?*

A.—The hazards of work in compressed air vary primarily with the pressure, but the general view is that the following conditions would prejudice a candidate for such employment: age exceeding 40 (for first employment) or below 20; obesity; disease of the heart, lungs, or kidneys; otitis; rhinitis or sinusitis; the common cold; alcoholism. Apart from care in the selection of men for work in compressed air, re-examination at frequent intervals is advisable.

NOTES AND COMMENTS

Expression of Placenta.—Dr. W. KEVERALL MCINTYRE (Launceston, Tasmania) writes: May I be allowed to comment on the answers given in your "Any Questions?" column (Aug. 2, 1947, p. 195, and Oct. 25, 1947, p. 679) on the removal of placenta by injection of the umbilical vein and on expression of placenta? The replies stated that injecting the cord is a "time-consuming" method and is applicable only when the condition is not complicated by haemorrhage and that "this appears to be effective in only a few cases."

For many years I have given 0.5 ml. of "pituitrin" intramuscularly as the head is being delivered, and I consider this useful; but the more recent practice of intravenous injection of ergometrine seems to give better results. Even so, I still find the cord injection has a very definite use in third-stage difficulties.

During the last eight years I have proved many times that in a large percentage of cases of retained placenta, particularly those due to uterine inertia, a *rapid* injection of *hot* saline into the umbilical vein not only controls haemorrhage but also stimulates its spontaneous expulsion unless complicated by hour-glass or other contraction ring. If the injection is begun 12 in. (30 cm.) from the vulva, the temperature falls about 10° F. (5.5° C.) in the placental tissues, so that I usually have the saline at about 125° F. (51.7° C.), increasing or decreasing this according to the length of the cord. It is not a "time-consuming" method if the simple apparatus is ready, autoclaved for immediate use. As advocated by Currie, a "sterilendum" enema syringe is much more efficient and expeditious than a "large-sized syringe."

In any properly equipped maternity hospital a two-pint (1.14-litre) jug of hot saline can be prepared in two or three minutes, and the large-bore nozzle or needle of the syringe can be inserted into the vein and the solution injected rapidly—actually it takes me less than two minutes to inject two pints if that amount is required. Frequently uterine response to the hot uterine douche and to the rapid increase in the bulk of the placenta is sufficient to control haemorrhage and expel the placenta before the injection of the two pints has been completed. It is of particular value in cases of atonic uterus in which there is a tendency to steady haemorrhage (even though the amount of blood lost may not be immediately alarming) and the placenta cannot be expressed because of the inertia. If the retention is due to a contraction ring or to a partial (or complete) placenta accreta, one does not expect the injection to expel the placenta, but it will, as I and other of my colleagues have demonstrated over and over again, control the haemorrhage and allow its natural removal later when the ring relaxes. If this has to be done manually, the firm engorged placenta is much more easily handled and removed.

I would suggest that your correspondent, if he sees this rather belated comment, should read the articles[1-4] for details of this simple technique.

In my private practice I have carried out this procedure for various reasons 182 times in my last 3,000 deliveries. I frequently inject the cord if there has been intrauterine interference in the second stage (manual rotation, high forceps, etc.) or third-stage inertia following prolonged labour, or in certain cases who have had post-partum haemorrhage or manual removals in previous deliveries. Of these 182 cord injections, 154 were successful (81%)—in 50 the placenta was spontaneously expelled during the injection, and in 104 immediately or a few minutes afterwards—28 cases were classed as failures, though in many of these the haemorrhage was controlled and the placenta expressed later. Ten (0.33%) had to be completed by manual removal—two of these had a partial placenta accreta and four had definite contraction rings confining part or all of the placenta. In 1,350 previous cases I had done 18 manual removals (1.3%).

If the value of the technique is understood—and correctly practised—and the simple apparatus is always ready for immediate use, it is not as "time-consuming" as changing gloves and other precautions which should be taken before a manual removal is carried out. It is a safe and easily performed hot intrauterine douche, which reduces the amount of blood loss, lessens the chance of infection, and stimulates uterine contractions, so that the placenta is frequently spontaneously expelled. If not, it can usually be expressed soon afterwards.

REFERENCES

1 Currie, D., *British Medical Journal*, 1937, **2**, 57.
2 McIntyre, W. K., *Med. J. Austral.*, 1939, **2**, 62.
3 ——, Ibid., 1942, **2**, 517.
4 ——, Ibid., 1944, **2**, 113.

Ringworm of Scalp.—Dr. R. T. BRAIN (London, W.) writes: While agreeing with the letter of Dr. I. M. Scott (Dec. 27, 1947, p. 1066) I have little doubt that others, like myself, have given much thought to the therapy of tinea capitis. Many new fungicides have been produced, and some were credited with more effective fungicidal action than the older remedies in general use. However, as Dr. Scott pointed out, the effectiveness of the fungicide is of less importance than the penetrability of the substance into the hair shaft and down to the bottom of the infected follicle. It seemed probable that some of the new wetting and emulsifying agents might overcome this difficulty, and the problem has been studied since June, 1946, in the laboratory of St. John's Hospital for Diseases of the Skin. Dr. Kenneth Crow began experimental therapy based upon the above-mentioned factors in June, 1946, and this work has been continued by Dr. H. Haber and by Mr. Hadgraft, chief pharmacist of the Royal Free Hospital; but one has delayed publishing results lest it should be thought that the older techniques involving epilation by *x* rays or thorium X were already obsolete.

Several fungicides were tried, but the most favourable series of reactions occurred with the use of a preparation of phenyl mercuric nitrate. In this series 22 cases have been treated—8 due to *M. audouini*, 9 due to *M. felineum*, 4 in which the fungus was not cultured, and one endothrix case. Out of the 22 cases 17 (77%) were cured, the average treatment period being two months, and the criteria of cure a period of repeated observation over two to three months.

A new series of cases has now been started using salicylanilide, and so far the results are encouraging. The penetrating base consists of a mixture of carbo-wax with Crill No. 6 containing phenyl mercuric nitrate. It should be pointed out that much work on similar lines has been done in America, particularly in New York, by McKee, Hermann, and Karp and other co-workers. Details of the researches at St. John's Hospital will be published shortly, but it was thought desirable to make this comment and the cautious observation that it is hoped that from this and similar researches it may be possible eventually, but not yet, to avoid the troublesome techniques of preliminary epilation in the treatment of ringworm of the scalp.

Thoraco-Lumbar Splanchnicectomy.—Mr. FRANCIS E. STOCK (Liverpool) writes: You have condensed my short note on a "New Incision for Splanchnicectomy" read before the Liverpool Medical Institution into three lines (Dec. 27, 1947, p. 1052). The result is somewhat misleading, and lest I should be accused of plagiarism I hasten to correct a false impression. The incision described is not new but is an extension of Fey's thoraco-abdominal incision for the approach to the upper pole of the kidney. As far as I am aware, however, the use of this incision has never been advocated for thoraco-lumbar splanchnicectomy, all the standard incisions for this operation being placed more posteriorly.

Windows in Plasters.—Dr. DAVID A. HERD (Leeds) writes: The following is a simple method which I have used for several months and one which may be of interest to your readers. All that is required is an ointment box large enough to completely encircle the ulcerated area. Remove the lid and base and reduce the side depth to about 1/2 in. (1.25 cm.), at the same time shaping one of the edges to the skin part. Place the collar round the ulcer and apply the plaster-of-Paris bandage. Before the last one is applied I cut down and remove the collar, using the last bandage to smooth off the ragged edges. In this way you are left with a clean, correctly placed window whose edges are slightly elevated from the surrounding skin.

William Russ Pugh: a Pioneer Anaesthetist.—Dr. GEOFFREY KAYE (Melbourne) writes: The first administration of an anaesthetic in the Australian colonies was performed by William Russ Pugh, of Launceston, in June, 1847. The ultimate history of this pioneer worker is unknown and the Australian medical historians are anxious to elucidate it. The following biographical facts are recorded: William Russ Pugh graduated L.F.P.S. (Glasgow), 1835; M.D. and Ch.D. (Giessen), 1844; F.R.C.S. (Edin.), 1860. He migrated to Van Dieman's Land about 1838. In about 1854 he moved to Melbourne and his name appears on the *Medical Register* of Victoria for the years 1862–73. It is absent in the year 1874, the presumption being one of death or retirement. The Register of Deaths for the years 1872–7, inclusive, does not contain the name of Dr. Pugh; it is therefore possible that he returned to spend his last years in Britain. Should any reader have information as to the fate of Dr. Pugh or of his family, he is invited to communicate with the Curator of the Museum, Australian Society of Anaesthetists, Physiology School, The University, Melbourne, Australia.

Correction.—*Radiology for Medical Students*, by F. J. Hodges, I. Lampe, and J. F. Holt, was named incorrectly in our review columns on Jan. 3 (p. 15).

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